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## PELLAGRA.

### A REPORT ON ITS EPIDEMIOLOGY.

By R. M. GRIMM, Assistant Surgeon, United States Public Health Service.

(Continued from Public Health Reports Feb. 28, 1913.)

*Predisposing causes of pellagra.*—The evidence upon which any condition or circumstance in the previous history of a pellagrin may be considered as a predisposing cause is at the present time necessarily circumstantial. Reasoning by analogy with other diseases brings us to the conclusion that some physical conditions should certainly predispose to the development of this disease. Positive proof for such a conclusion is, however, yet wanting, but there seems to be at hand enough evidence to warrant the assumption that certain conditions predispose to the development of pellagra. Not a few of the pellagrins in this series of cases whom I interviewed stated that their health had been excellent previous to the onset of pellagra, and in some instances it seemed quite impossible to determine the condition which had probably acted as a predisposing cause. Many of them, however, gave histories of conditions which even they themselves considered as contributing causes and which undoubtedly did contribute to the appearance of the pellagra symptoms.

Among the conditions which were reported to me by the pellagrins as belonging to their prepellagrous history may be mentioned some which seemed to have acted as predisposing causes, such as: Typhoid fever, septicemia, pneumonia, asthma, whooping cough, pulmonary tuberculosis, renal tuberculosis, malarial fever, syphilis, hookworm disease, smallpox, measles, alcoholism, morphia habit, lead poisoning, diseases of the digestive system, as "indigestion," chronic constipation and others which might easily have been some of the early symptoms of pellagra, fistula, diseases of the gall-bladder, Bright's disease, anemia, muscular atrophy, poliomyelitis, paralysis, epilepsy, migraine, neurasthenia, arthritis deformans, "rheumatism," idiocy, imbecility. Among the females there were complaints referable to the reproductive function and sexual organs as, puerperal fever,

eclampsia, salpingitis, lacerations of the perineum, menstrual disturbances, pregnancy and lactation; injuries and operations seemed to figure to no small extent. In general it seems that conditions which lower the body resistance to diseases better understood than pellagra, or conditions congenital or acquired which handicap the individual in withstanding the stress and strain in the struggle for existence, have some influence as predisposing causes, so that hard work and worry incident to the support of a large family, the illness or death of some loved one, seemed to have paved the way for the development of pellagra in a number of instances. Enlargement of the thyroid was noted in several of the female pellagrins, but was not a constant finding.

The conditions listed above add nothing to the general observations made by others and are given here merely to supplement data bearing upon the question of predisposing causes. Poor living conditions associated with an insanitary environment, as was found in so many of the cases of pellagra in this series, and especially with a questionable dietary, may possibly also predispose to conditions which favor the development of pellagra.

*Typical cases.*—The face and reverse sides of the cards of two cases have been reproduced here. These cases may be taken as typical. Case WKB 2 is supplemented by photographs which are referred to on the card of this case. These photographs were taken for me by Mr. Robert Asher, of Wasioto, Ky., and give some idea of the character of the country in which the Kentucky cases of the series developed.

(Face of card. Case SCG 3.)

Series SCG.  
Case: 3. Name: Mr. B.  
Seen with Dr. R. B. E.

Reported by —, S. C.

Age: 29. Sex: M. Race: White. **M** S W

Family: One half sister said to have died of pellagra. Personal: Asthma for 16 years.

Children: 2. Marriage: Nine years ago.

Remarks..... Residences: In present house past 8 years. First occupant.

Address: 218 F Ave. Date: April 4, 1912.  
Note: Seen at home. Diagnosis: Pellagra.  
Nativity: S. C. Occupation: Cotton-mill worker.

Pellagrous (present attack).

Date of onset: About March 20, 1912.  
Residence at: 218 F Ave.

(Town.) (State.)

Number and health of family: Wife and 2 children.  
All these apparently healthy.  
Food: From Mr. M.'s store.  
Water supply: City supply.

City, Town Rural: Cotton-mill village.

Relation to watercourses: Stream 15 yards back of house.

Remarks: Has been taking Fowler's Solution.

Treasury Department,  
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Ed. Sept. 12-11-1,000.  
Forms Committee, 9-12-11.

(Reverse of Card. Case SCG 3.)

SCG 3—

## PELLAGROUS (FIRST ATTACK).

Date of: Spring (April), 1910.

Residence at: 218 F Avenue.

Number and health of family: Father, mother, wife, and 2 children. No pellagra.

Relation to other cases: Visited half sister April 4, 1912, who had "pellagra" and died.

To heredity: Children well.

To animals: .....

Food: From Mr. M.'s store. Very few canned goods.

Corn: Yes. Corn bread, canned corn.

Water supply: Well, dug 25 feet. Spring at times.

To water courses: Stream 15 yards from house.

Remarks: .....

## ENVIRONMENT AND CONDITIONS.

Topography: Rolling. Elevation approximately 600 feet.

Location of house—City, Town, Rural: Cotton mill village, 2 miles from town. No car line.

Economic: Poverty.

Sanitation: Bad. House sanitation bad.

Water courses: Small stream—constant flow, 15 yards from house.

Water supply: City supply-hydrant.

Remarks: Surface closet across stream.

No screens to house.

Larvæ of Simulium in stream back of house, found by Mr. King.

Face of card. Case WKB 2.

Series: WKB

Case: 2. Name: Mrs. B. H.

Seen with: Dr. J. G. F.

Reported by: —, Kentucky.

Age: 16. Sex: F. Race: White. (M) S W

Family: History good. Father, mother, 7 brothers and sisters living and well. Personal: Second of 8 children. Previous health good.

Children: None. Marriage: April 20, 1911.

Remarks: Photos of patient, "Paternal home" and "Present home."

Residences: Paternal home for 12 years. Same house. Photo "C." Moved to present home, May 24, 1911. Photo "D."

Address: —, Kentucky. Date: Aug. 13, 1911.

Note: Seen at parental home. Diagnosis: Pellagra.

Nativity: Kentucky. Occupation: Housework

wife of sawmill man.

Pellagrous (present attack).

Date of onset: See first attack.

Residence at: (Town) (State)

Number and health of family .....

Food .....

Water supply .....

City, town, rural .....

Relation to water courses .....

Remarks .....

Public Health and Marine-Hospital Service.  
Ed. Sept. 12-11—1,000.  
Forms Committee, 9-12-11.

(Reverse of card. Case WKB 2.)

WKB 2.

## PELLAGROUS (FIRST ATTACK).

Date of: Appearance of erythema. June, 1911.

Residence at: W —, Photo "D."

Number and health of family: Husband—well.

Relation to other cases: None known.

To heredity: No known relationship.

To animals: No relationship.

Food: From store at W —, Photo "D."

Corn: Yes.

Water supply: Spring—goes dry during dry season.

To water courses: One hundred yards from river.

Remarks: Had not been out of vicinity previous to onset. Used mostly home-grown food at parental home before marriage. After moving to W —, depended on stores.

## ENVIRONMENT AND CONDITIONS.

Topography: Mountainous—approximate elevation 1,000 feet.

Location of house—city, town, rural: Five miles from nearest town.

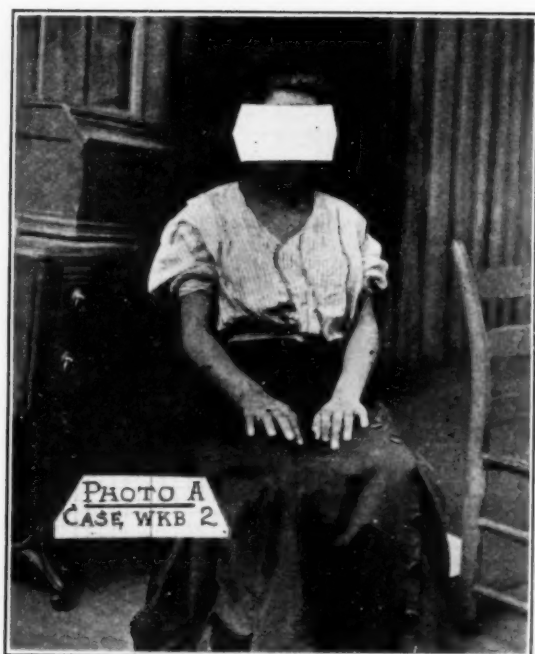
Economic: Poverty.

Sanitation: Bad.

Water courses: One hundred yards from Cumberland River.

Water supply: Roadside spring. Used by other farms.

Remarks: House flies, "deer flies," mosquitoes, gnats.



PHOTOGRAPH A. CASE WKB 2.

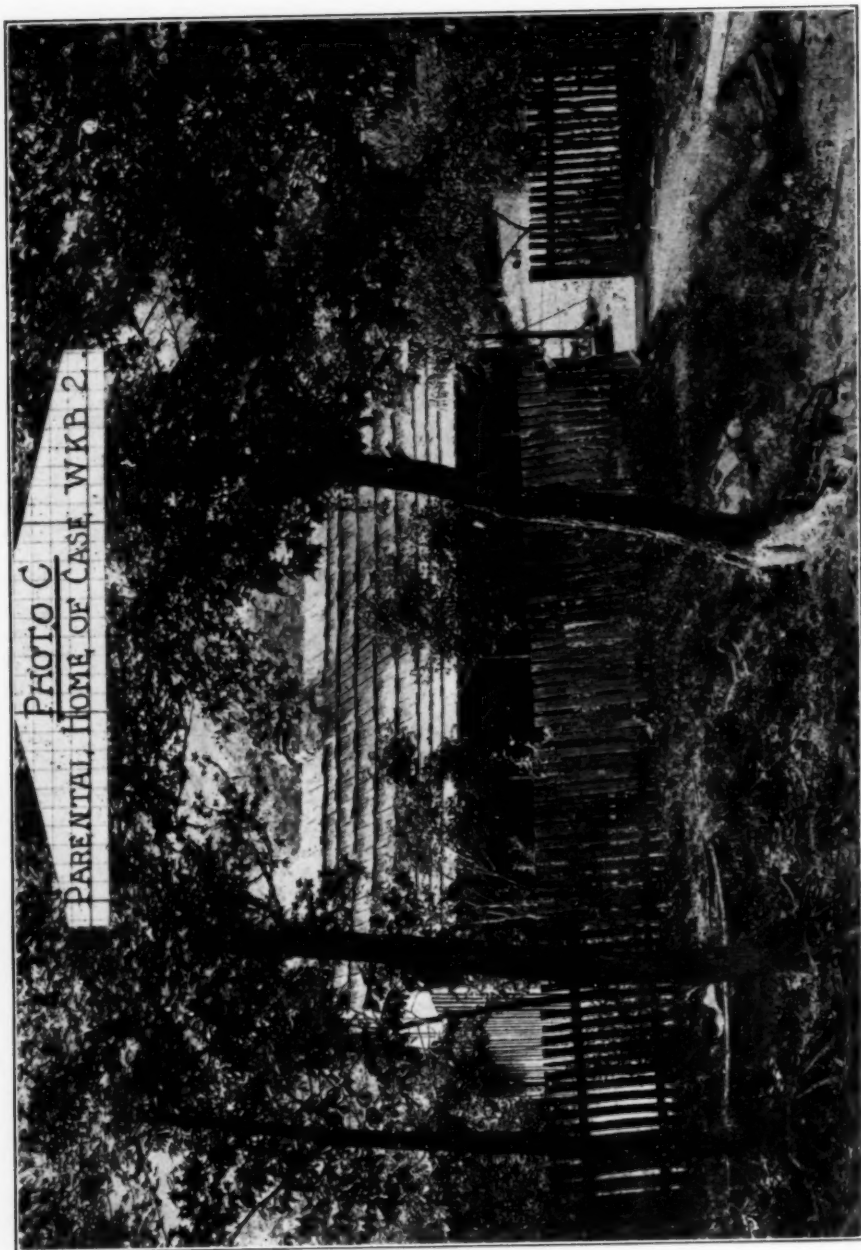
Taken for the United States Public Health Service by Mr. Robert Asher, Wasioto, Ky.





PHOTOGRAPH B. CASE WKB 2.

Taken for the United States Public Health Service by Mr. Robert Asher, Wasioto, Ky.



PHOTOGRAPH C. PARENTAL HOME OF CASE WKB 2.

Taken for the United States Public Health Service by Mr. Robert Asher, Wasioto, Ky.



PHOTOGRAPH D. HOME OF CASE WKB 2.

Taken for the United States Public Health Service by Mr. Robert Asher, Wasioto, Ky.

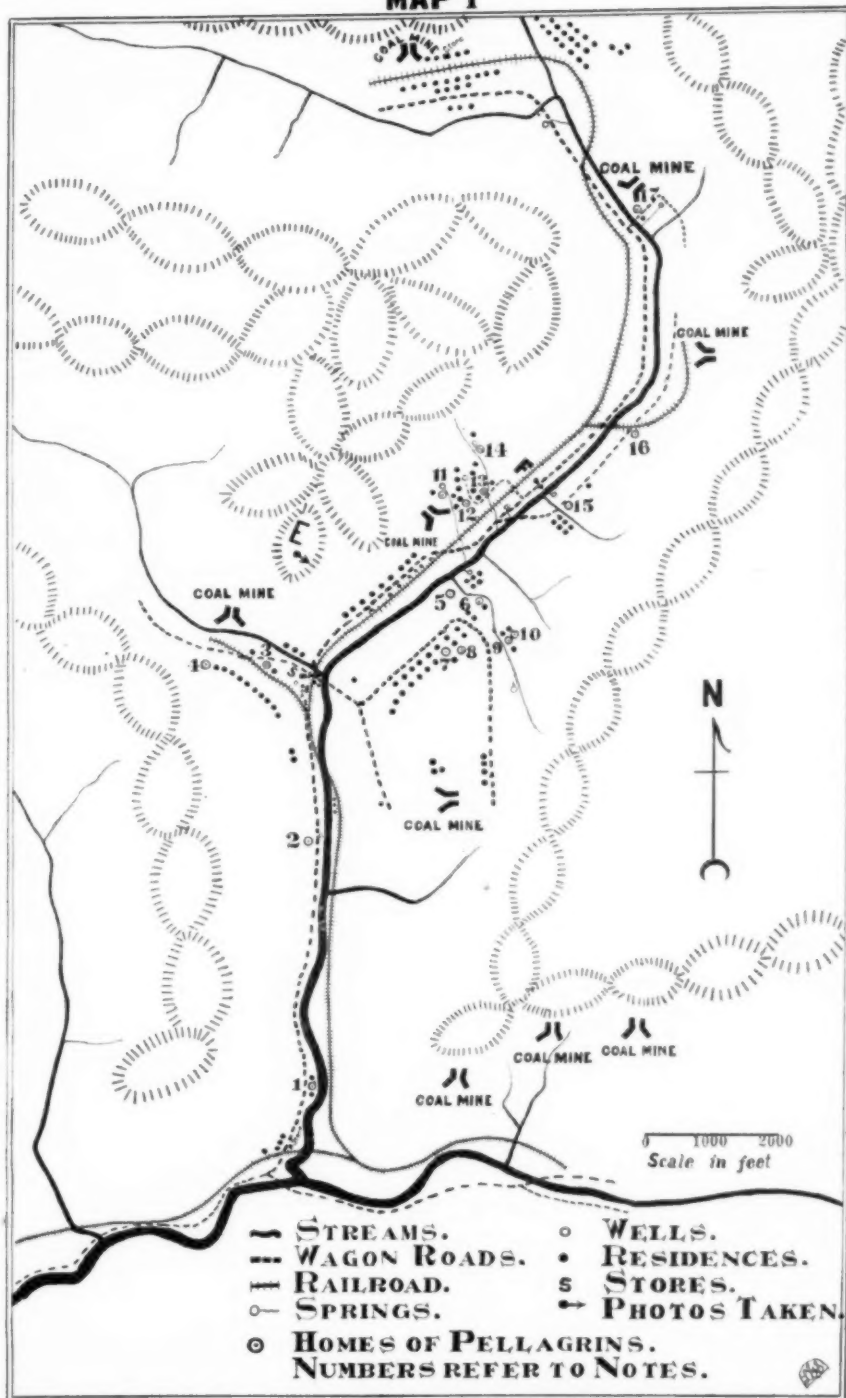
## CONSIDERATION OF THREE COMMUNITIES.

Consideration will now be given to the pellagra situations in communities of three of the districts visited where through the kindness and assistance of the local physicians I was able to locate and see quite a number of pellagrins and in a way work up the history of the development of the disease. One community is in Kentucky, one in South Carolina, and one in Georgia. The pellagra situation in these three communities may be taken as typical of that which was found in many of those visited, which under the circumstances could not be worked up as thoroughly as the ones given here.

*Consideration of District "SC."*—The presence of pellagra seems to have been first recognized in this community during the spring of 1911. The country here is mountainous and has an average elevation of about 1,000 feet above sea level. The community represented in the map (Map 1) is one made up of coal mining camps which are located around the mines at various points along a creek. The population of the area shown in the map is probably 2,000 or more, consisting largely of employees of the coal mining companies. The data pertaining to this community were collected in August, 1911, and since that time no additional information has been obtained regarding the pellagra situation there.

The map with the legend is partly self-explanatory, but some accompanying notes are given which refer to locations on the map with corresponding numbers.

MAP 1



## NOTES ON MAP 1, COMMUNITY "SC."

1. Case WKB 24. White female. Married. Living here since 1908. Developed pellagra here May, 1911. Baby 6 months old, marasmic, and has diarrhea.

2. Case WKB 14. White female. Married. Developed pellagra while living here in July, 1909. Lived here from April, 1909, to November, 1909, when she moved to house 3. (Which see.)

Cases WKB 6 and WKB 7 (mother and son). White. Moved here October, 1910.

Developed pellagra while living here spring and summer 1911. Two other children in same family are probable cases.

3. Case WKB 14 now living here. Seen while in third attack.

4. Case WKB 16 now living here. White female. Single. Developed pellagra while living at house 12 (which see) in July, 1911.

5. Case WKB 13 now living here. White female. Married. Onset in July, 1910, while living in this vicinity.

6. Case WKB 126, a probable case, now living here. White female. Married.

7. Case WKB 11, now living here. Onset in July, 1911, while living here.

8. Case WKB 10, now living here. White female. Married. Developed pellagra in summer 1909 while living farther up creek.

9. Case WKB 122, lived here. WKB 126 lived here afterwards and just previous to onset of probable symptoms in summer, 1911.

10. Case WKB 12, now living here. White female. Married. Developed pellagra while living here in July, 1911.

Photograph "E" shows houses 5, 6, 7, 8, 9, and 10.

11. Case WKB 18, now living here. Onset while living here in June, 1911.

12. Case WKB 16 developed pellagra while living here in July, 1911. Now living at house 4. (See above.)

13. Case WKB 17, now living here. Developed pellagra elsewhere in 1907.

14. Cases WKB 19 and WKB 36 (sisters-in-law) developed pellagra while living here in May, 1911. Living here since October, 1910.

15. Case WKB 125 developed pellagra while living here. Moved away and died of pellagra in June, 1911. Case WKB 124 moved here later and developed pellagra while living here in June, 1911. This house is shown in photograph "F," which was taken from a point on the opposite bank of the creek.

16. Case WKB 35 now living here.

17. Case WKB 127 developed pellagra while living here in 1909. Moved away and died of pellagra in July, 1911.

Case WKB 20 of another family developed the first symptoms of pellagra while living here in spring, 1911. Moved here in November, 1910, and now living here. A probable case, granddaughter of WKB 20, is now living here with WKB 20.

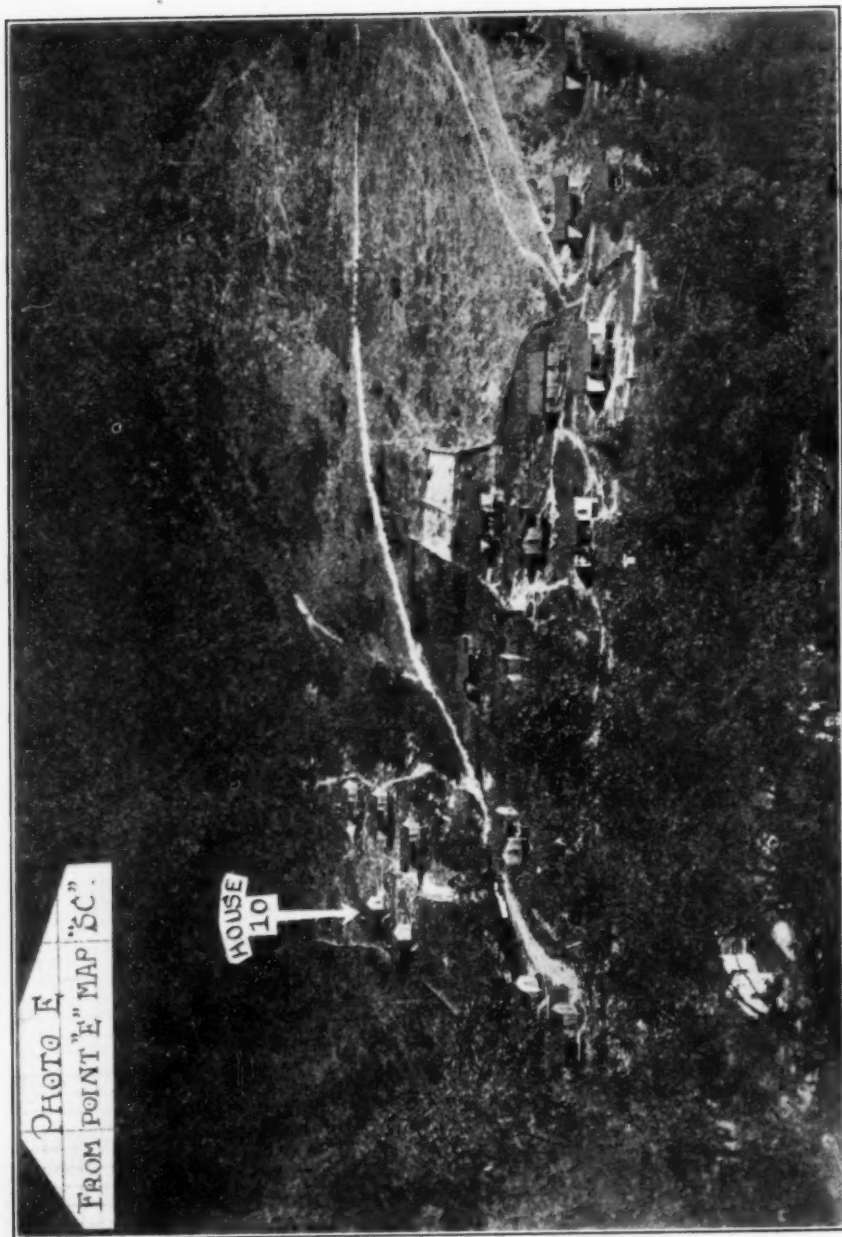
It was learned that the food used in the families living in this community had been obtained largely from near-by stores, the locations of which are designated on the map by the letter "S." A list of the articles having the largest sale at one of these stores was given above when the subject of food was being discussed. Corn products had been used extensively by all of the pellagrins personally seen in this community, as well as by the other members of their families. These had been obtained almost exclusively from the stores and were said to have been imported. Some of these people told me that the meal which they had used had not always been of the best quality. The mining companies have sunk deep wells at various places, the locations of which are designated on the map by a small circle, but many of the families were found to be getting their drinking water from the streams and from springs. The springs which were inspected were certainly not above suspicion as sources for drinking water. The condition of the interior of many of the homes of the pellagrins visited in this community was such as to lead one to suspect that they offered a fruitful field for the collection and study of some of the ordinary ectoparasites of man. None of the pellagrins in this community were found living in screened houses, although mosquitoes were said to be prevalent. I have learned that the entomologist of the State University at Lexington, Ky., visited this community later and that he collected from the streams pupæ of the fly *Simulium*.

The two photographs "E" and "F," which were taken by Dr. J. Harry Hendren, show in a way the character of the country here. Photograph "E," taken from point designated "E" on the map, shows the opposite hill, including the locations of the houses designated on the map as 5, 6, 7, 8, 9, and 10. Photograph "F," which was taken from point "F," shows house 15; also the source of water supply of this house.

I am greatly indebted to the physicians in this district, and especially to Dr. Hendren, who rendered much assistance to me while working up the pellagra situation in this community. Much of the data was obtained from Dr. Hendren, and the two photographs were taken for me by him.

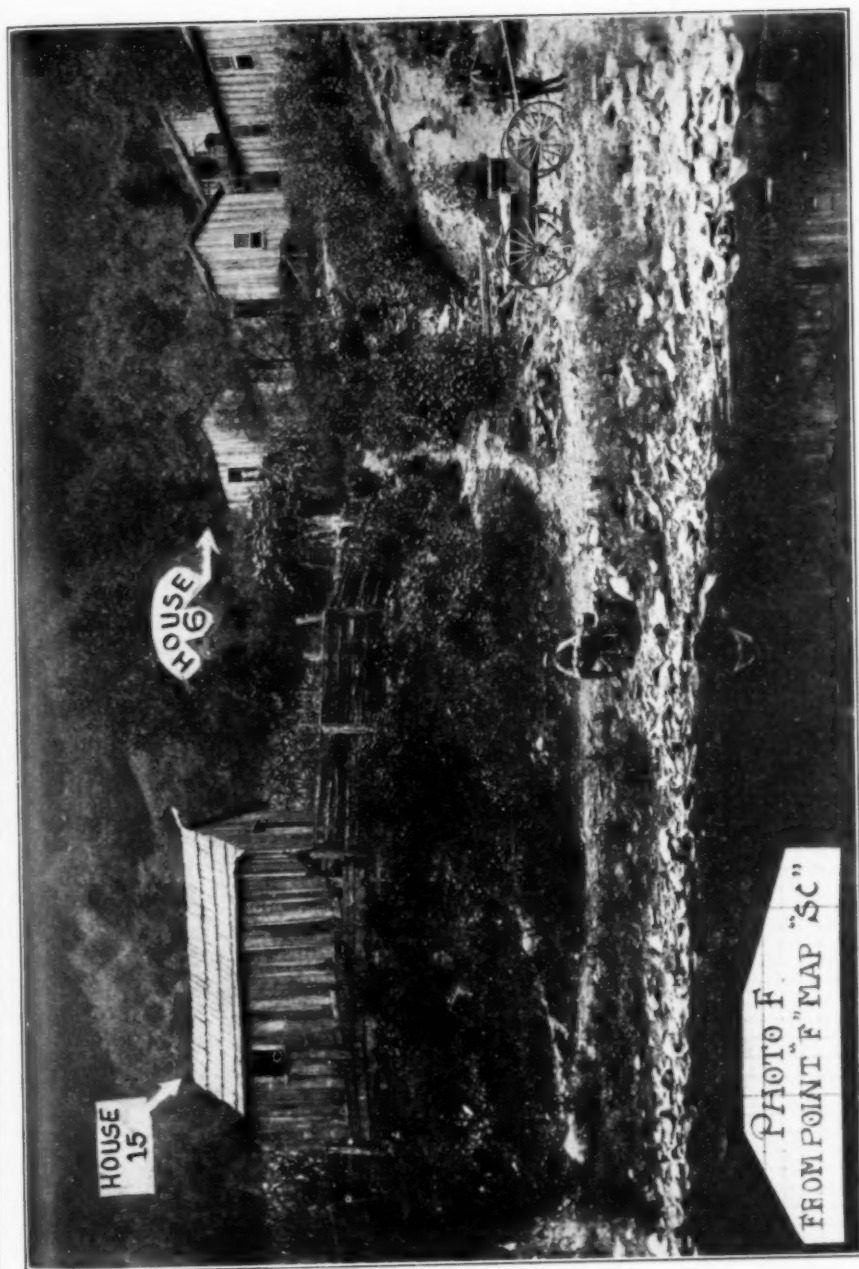
*Consideration of Village "E.M."*—One little cotton-mill village in Chester County, S. C., proved to be of special interest, on account of the fact that many cases had been known to develop there and that the pellagra situation had been followed from its beginning by the local physicians. I visited this village in October, 1911, and found that about 25 cases of pellagra had been known to develop in persons living in it previous to that time. Some of the pellagrins were still residing there, while others had moved away or had died. I did not





PHOTOGRAPH "E" OF COMMUNITY "SC" TAKEN FROM POINT E, INDICATED IN MAP I.

Taken for the United States Public Health Service by Dr. J. Harry Hendren, Cary, Ky.



PHOTOGRAPH "F" OF COMMUNITY "SC", TAKEN FROM POINT F, INDICATED IN MAP 1.

Taken for the United States Public Health Service by Dr. J. Harry Hendren, Cary, Ky.

visit this village in 1912, but have learned that the pellagra situation there is still of extreme interest.

A reduced map of this village is reproduced here (map 2, Village "EM") which, with the accompanying notes, will give some idea of the pellagra situation with which the people of this village have to deal. The eastern half of the map represents the cotton-mill village and the western half the suburbs of a neighboring town. The population of the area represented in the map is approximately 500. The legend shows the locations of the residences and of the homes of the pellagrins. The homes of the pellagrins have been numbered and the notes corresponding give brief statements regarding the pellagra histories of these houses. The two groups of houses in the villages are located on slight elevations and are separated by a very small stream or slough. A stream which has a constant flow is located about 200 yards to the eastward as shown in the map. The homes of pellagrins have been numbered as in the preceding map and refer to notes given below.

#### NOTES ON MAP 2. VILLAGE "EM."

1. Case SCY 250. White female. Developed pellagra here in 1904. Died. Said to be one of the first cases of pellagra diagnosed as such in South Carolina.

Case SCY 257, of another family, developed pellagra here in 1911. To State Hospital for Insane.

2. Case SCY 249, developed pellagra here in 1904. Died.

3. Case SCY 227 and SCY 228 (brothers), developed pellagra here in 1909. Family moved away.

Case SCY 254, developed pellagra here in 1911. Family moved away. Died. (Dr. McConnell reports two other cases (father and daughter) in this house during the summer of 1912. Father died.)

4. Case SCY 205, developed pellagra here in 1909. Daughter of case in House 12. Now living in House 19. Has a little son with pellagra.

5. Case SCY 253, developed pellagra here in 1909. Living here in October, 1911.

6. Case SCY 252, developed pellagra here in 1910. Moved away.

7. Case SCY 251, developed pellagra here in 1910.

8. Case SCY 251, lived here after onset of the disease.

9. Case SCY 214, developed pellagra here in 1911.

10. Case SCY 214, living here in October, 1911.

11. Case SCY 225, developed pellagra here in 1911. Moved away. (Dr. McConnell reports another case developing here in 1912).

12. Case SCY 204, developed pellagra here in 1910. Living here in October, 1911.

13. Case SCY 255, developed pellagra here in 1910. Moved away.

14. Case SCY 231, developed pellagra here in 1910. Living here in October, 1911.

15. Case SCY 256, developed pellagra here in 1910. To State Hospital for Insane.

16. Case SCY 203, developed pellagra here in 1911. Living here in October, 1911.

17. Case SCY, developed pellagra here in 1910. Living here in October, 1911.

18. Case SCY 223, developed pellagra here in 1911. Died in asylum.

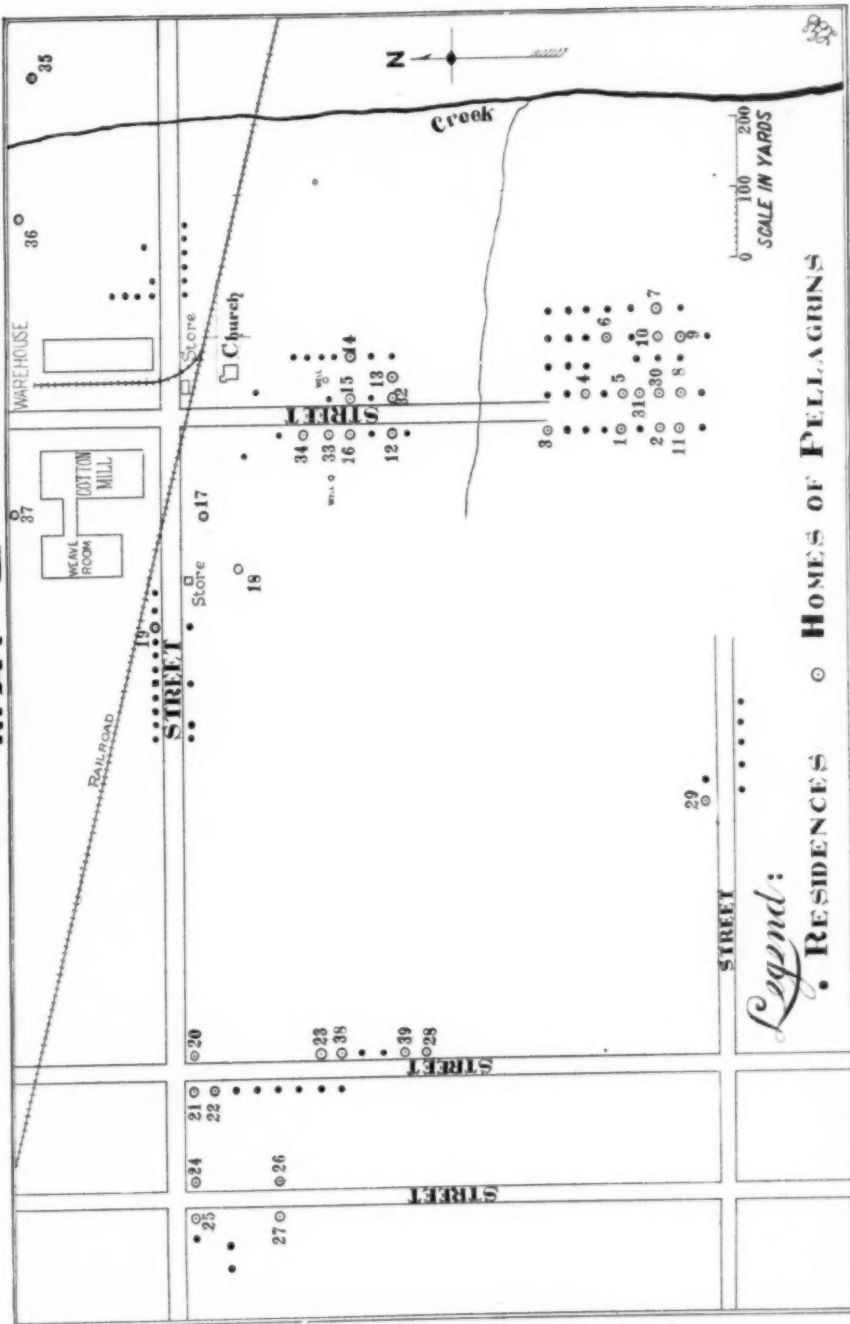
19. Case SCY 206, developed pellagra here in 1911. New house. Son of SCY 215.

20. Case SCY 281 developed pellagra here in 1906. Died.

21. Case SCY 278 developed pellagra here in 1910.

22. Case SCY 278 living here October, 1911.

# MAP 2



23. Case SCY 241 lived here in 1907. To State Hospital for Insane. Died.
24. Case SCY 233 developed pellagra here in 1910. Moved away.  
Case SCY 263 lived here later. Developed pellagra in this vicinity. Died.
25. Case SCY 232 developed pellagra here in 1910. Moved away.
26. Case SCY 277 developed pellagra here in 1907. Moved to House 27.
27. Case SCY 277 living here October, 1911.
28. Case SCY 235 developed pellagra here in 1911. Died.
29. Case SCY 211 died here of pellagra. Developed the disease elsewhere. (Additional notes from Dr. McConnell, December, 1912.)
30. Two cases here (mother and child), 1912.
31. Child 2 years old here, 1912. New case.
32. One case; 1912.
33. One case; 1912.
34. One case; 1912.
35. One case; 1912.
36. One case; 1912.
37. One case; 1912.
38. One case, died here.
39. One case, developed here in 1912.

Attention is invited to the location of the store near the railroad switch from which much of the food used in the village is obtained. Stores in the neighboring town are also patronized, however. Corn products had been used as articles of diet by all of the pellagrins personally seen. The water supply is obtained from wells located at various places in the village, designated on the map by small circles. A number of the pellagrins stated to me that bedbugs were present in their homes, but no specimens were collected. Mosquitoes are prevalent here, and screened houses are the exception.<sup>1 2</sup>

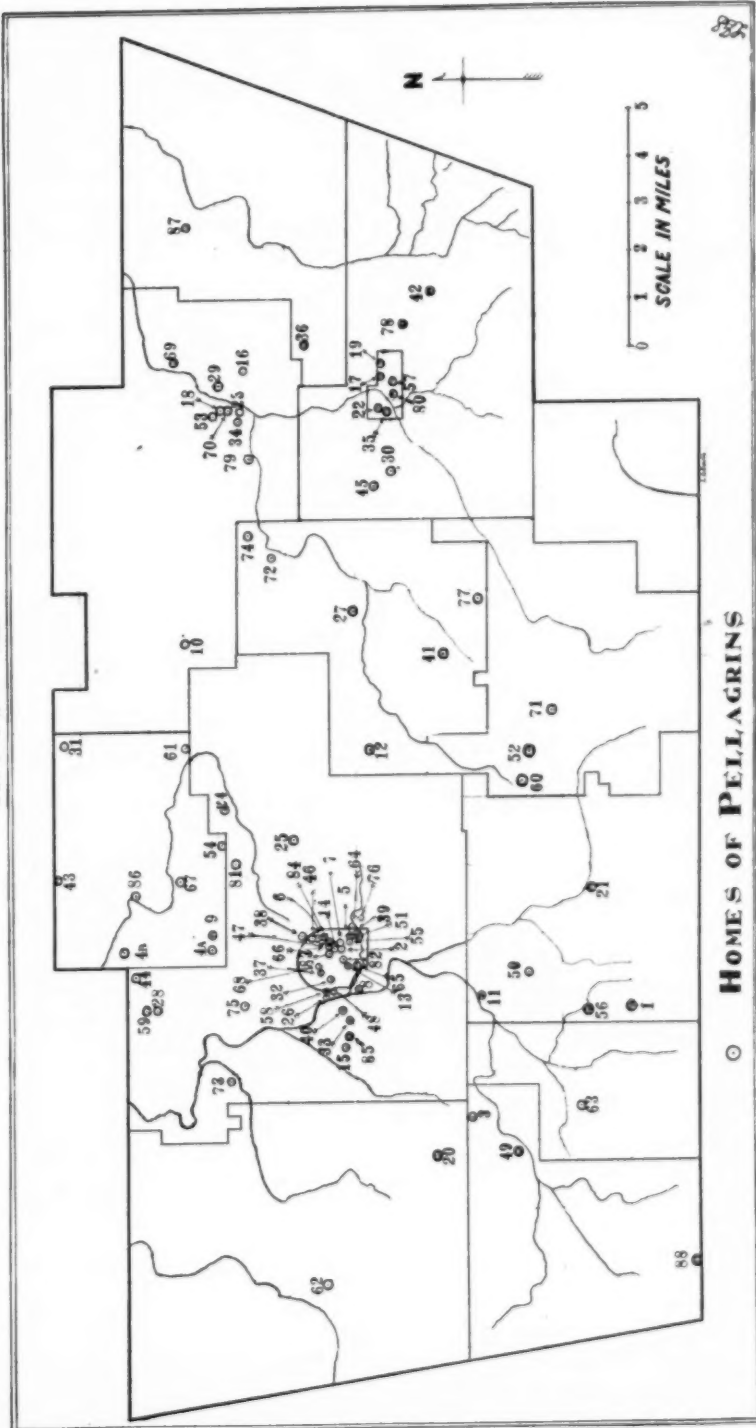
*Consideration of County "PK."*—Through the kindness of the local physicians in one of the Georgia counties, I was able to locate practically all of the cases of pellagra that had been known to occur in the county up to July, 1912. I was able to see many of these cases and to confirm the diagnosis and obtain from the pellagrins themselves more detailed data regarding their cases. A reduced map of this county is given here (map 3, county "PK"), upon which the location of the cases is indicated as in the preceding maps. Notes are also given under the corresponding numbers, which contain some information regarding the cases.

The average elevation of this county is about 900 feet above sea level. The population was said to be something under 21,000 in 1910. The western portion especially is mountainous and rough, but the county is fertile, and throughout the county cotton is cultivated on a large scale; also corn to a certain extent. The actual cultivation of the crops is done almost exclusively by the "renters"

<sup>1</sup> It may be of interest to state here that Mr. W. V. King, of the Bureau of Entomology, United States Department of Agriculture, who visited this community with me, stated that he collected specimens of larvae of the fly *Simulium* from the waters of the little creek to the east of the village.

<sup>2</sup> Thanks are due to Dr. H. E. McConnell, of Chester, S. C., for his kind assistance in the collection of the data pertaining to this village and for the notes on the developments during 1912.

## MAP 3





and "croppers," who for the most part live under conditions of poverty and bad hygiene. These people are nomadic in character and rarely live at one place for any length of time. It is among them that most of the rural cases occurred. Cotton mills are located at several places in the county, and, as will be seen from the notes, the workers in these mills furnished quite a number of the cases.

## NOTES ON MAP 3. COUNTY "PK."

1. Reported case. White female. Married.
2. Reported case. White male. Onset, 1910. Died.
3. Reported case. White female. Onset, 1910. Died. Granddaughter is a probable case.
- 4a. Reported case. Developed pellagra here in 1910. Moved to 4b and died of pellagra.
5. Two reported cases. Husband and wife. White. Factory people. Onset, 1911. Husband died.
6. Two cases personally seen. Brothers, ages 5 and 7 years. Colored. Onset here May and June, 1912. Much improved July, 1912.
7. One case personally seen. White. Miner's wife. Developed pellagra here in May, 1911.
8. One case personally seen. White female. Married. Developed pellagra in this vicinity, summer, 1911.
9. Three cases personally seen. Husband, wife, and one of four children. White. Renting farming class. Onset, May, April, and July, 1912, while living here. Ponds and swamps within 100 yards.
10. Reported case. Farmer's wife. White. Owns farm. Onset, 1911.
11. Reported case. Farmer. White. Onset, 1911.
12. Reported case. White. Mother of case at 25.
13. Reported case. White female. Had worked in cotton mill. Onset, 1912. Died.
14. One case personally seen. White. Wife of carpenter. Onset in 1909 while living in this vicinity. Family physician reports having treated five children for severe diarrhea 1908, 1909, and 1910.
15. Reported case. White female. Married. Laboring class. Onset, 1910. Died.
16. Reported case. Colored female. On farm. Onset, 1911.
17. Reported case. White female. Onset, 1912.
18. Reported case. White female. Married. Cotton-mill people. Onset, 1911. Doing well, 1912.
19. Reported case. White male. Farmer moved to town. Onset, 1912.
20. One case personally seen. White male. Farmer. Onset, May, 1911. Wife and five children well.
21. Reported case. Colored female. Farmer's wife. Onset, April, 1912. Died insane.
22. Reported case. White female. Farmer's wife. Onset, 1907. Died. Reported case. Daughter of above. Onset, 1911. Died.
23. Reported case. White male. Farmer. Onset, 1910. Died.
24. Reported case. Child. Farming class. Onset, 1912.
25. Case personally seen. Wife of farmer. White. Renting class. Onset, 1910, elsewhere. Daughter of case at 12. Husband is a probable case.
26. Reported case. Child. White. Factory class. Onset, 1911. "No recurrence in 1912."



27. One case personally seen. White male. Marble worker. Onset, May, 1912, while in Alabama.
28. One case personally seen. White female. Wife of farmer. Renting class. Onset in 1910, while living in another county.
29. Reported cases. Mother and baby. White. Factory people. Onset, 1911.
30. Reported case. White female. Cotton-mill people. Onset elsewhere.
31. Reported case. White male. Farmer.
32. Reported case. White male. Factory man.
33. Two cases personally seen. White. Brother 21 years old, sister 31. Brother is an idiot. Sister supports family by work in cotton mill. Very poor. Sanitation bad.
34. Reported case. White female. Farmer's wife. Onset, 1910. Died, 1911. "Ponds around house. Malarial fever common in vicinity."
35. Reported case. White male. Laborer.
36. Reported case. Colored female. Farmer's wife. Onset, 1911.
37. Reported case. White male. Mill worker. Died, 1912.
38. One case personally seen. White male. Machinist. Developed pellagra here, spring, 1911.
39. Reported case. White female. Cotton-mill people. Onset, 1911.
40. Reported case. White female. Cotton-mill people. Onset, 1911.
41. One case personally seen. Child. White. Youngest of four children. Onset, May, 1911.
42. Reported case. White child, aged 9 years. Farming class. Owns place. Onset, 1910. Died.
43. One case personally seen. White female. Wife of farmer. Onset here, 1912.
44. Reported case. Colored female. Wife of farmer. Onset, spring, 1911.
45. Reported case. White male. Farmer and teacher. Onset, 1909. Died insane.
46. Case personally seen. White female. Epileptic. Wife of blacksmith. Onset here, 1912.
47. One case personally seen. Colored female. Laundress. Onset while living here, 1912. Died later.
48. One case personally seen. White male. Groceryman and farmer. Onset here, 1912.
49. One case personally seen. White female. Wife of farmer. Onset, May, 1911, while living in southwest portion of the county.
50. Reported case. White male. Renting farmer. Died, 1910.
51. One case personally seen. White female. Works in cotton mill. Onset, 1911, while in another county.
52. One case personally seen. White female. Wife of farmer. Renting class. Onset here, spring, 1912.
53. Reported case. Colored female. Servant. Onset, 1911.
54. One case personally seen. White female. Wife of farmer. Onset here, 1911.
55. Reported case. White female. Cotton mill people. Onset, 1907. Died insane. Case now at 65 later developed pellagra here.
56. Reported case. White female. Moved from country just previous to onset in 1912.
57. One case personally seen. White male. Slate worker. Onset here, spring, 1909.
58. One case personally seen. White female. Cotton mill people. Onset here in 1911.
59. Reported case. (Seen later in State asylum.) White female. Farming class.
60. One case personally seen. Colored female. Wife of farmer. Renting class. Onset here, 1911.

61. Reported case. White female. Wife of farmer.
62. One case personally seen. Colored female. Onset here, July, 1910.
63. Reported case. White female. Farmer's wife. Owns farm. Died 1910.
64. One case personally seen. White female. Cotton mill people. Onset here, May, 1912.
65. One case personally seen. White female. Married. Cotton mill people. Onset spring, 1912, at house 55 previously occupied by a pellagrin who died there. (See 55.)
66. Reported case. White female. Farming and cotton mill class. Onset, 1910. Died 1911.
67. One case personally seen. White female. Farmer's daughter. Renting class. Onset, June, 1911, elsewhere.
68. One case personally seen. White male. Painter. Onset here, June, 1911.
69. Reported case. Colored female. Cement worker's wife. Onset spring, 1911. Died.
70. Reported case. White female. Cotton mill class. Onset, 1911. "Very few symptoms in 1912."
71. One case personally seen. White male. Farmer. Onset, 1911, elsewhere.
72. Reported case. White female. Insanity.
73. Reported case. White female. Farmer's wife. Onset, 1905.
74. Reported case. Colored female. Farmer's wife. Onset here, spring, 1912.
75. Reported case. Husband and wife. Farming.
76. Reported case. Colored female. Servant. Died 1910. Insane.
77. One case personally seen. Colored female. Farmer's wife. Onset here, June, 1912.
78. Reported case. White male. Onset, 1911. Died.
79. Reported case. White female. Farmer's wife. Onset here spring, 1911. Died.
80. Reported case. White female. Wife of farmer moved to town. Onset spring, 1911.
81. One case personally seen. White female. Farmer's daughter. Onset elsewhere spring, 1911. Return of very few symptoms in 1912.
82. Reported case. White male. Onset here. Died insane.
83. Reported case. Colored female. Died, 1912.
84. Reported case. Colored female. Died, 1911.
85. Reported case. White female. Mining class.
86. Reported case. Colored female. Died, 1911. "Wet case."
87. Reported case. White male. Farming class. Onset here, 1912.
88. Reported case. White female. Developed here. Moved to another county.

On account of the irregular contour of the country, streams are numerous throughout the county. Only the larger ones are shown in the map. Ponds, swamps, and sloughs are also numerous and consequently it is difficult to find many locations in the county far removed from surface water of some kind. No accurate entomological data was obtained, but mosquitoes were said to be prevalent in all of the districts visited. The presence of a moth and other parasites of corn was noted in practically all of the corn houses inspected. A specimen of imported corn was obtained from the farmer at House 85. The specimen contained many small cylindrical bodies, evidently the excrement of some parasite. The intraperitoneal injection of 3 c. c. of a saline emulsion of these bodies in a rat

was followed within 10 minutes by urination, defecation, and symptoms of acute distress on the part of the animal, and by death at the end of 12 hours. The autopsy showed a general peritonitis.

A summary of the cases of pellagra in this county may be given as follows:

	Number.
Total number of cases in County "PK".....	101
Located on the map.....	96
Cases personally seen which had onset in other counties.....	4
Cases personally seen which had onset in County "PK".....	31

In spite of the rural location in which many of these 31 cases had developed it was found that all of them had depended largely upon the grocery stores for their food supply. In all of the cases some of the corn meal which had been used had been obtained from the stores, and in many cases all of it. It might be said that corn products are used to a large extent by practically all people in this county and that much of that consumed is not home grown, since the local supply does not equal the demand. An attempt was made to trace some relationship among the cases with reference to the sources of the food supply of their families at the time of the onset of the disease. The data which were collected with reference to this point are given below for consideration.

Attention was directed to 16 stores among the patrons of which cases of pellagra had developed. These stores have been lettered and are listed below with accompanying references to cases that developed the disease while obtaining their food from them. The numbers outside of the parentheses refer to the locations on the map, while those within the parentheses are the numbers of the cases in my series SCG.

Store.	Number of cases among the patrons.	References to cases.
Store A.....	5	65 (SCG 175), 9 (SCG 172, 173, 174), 43 (SCG 163).
Store B.....	4	9 (SCG 172, 173, 174), 25 (SCG 158).
Store C.....	4	64 (SCG 150), 6 (SCG 147, 148), 47 (SCG 146).
Store D.....	3	77 (SCG 178), 41 (SCG 167), 71 (SCG 166).
Store E.....	2	46 (SCG 177), 38 (SCG 176).
Store F.....	2	68 (SCG 171), 67 (SCG 170).
Store G.....	2	33 (SCG 155, 154).
Store H.....	1	8 (SCG 169).
Store I.....	1	52 (SCG 165).
Store J.....	1	60 (SCG 164).
Store K.....	1	49 (SCG 162).
Store L.....	1	62 (SCG 161).
Store M.....	1	54 (SCG 159).
Store N.....	1	58 (SCG 153).
Store O.....	1	48 (SCG 152).
Store P.....	1	7 (SCG 149).
Various stores.....	3	20 (SCG 145), 14 (SCG 157), 57 (SCG 179).

## SUMMARY.

From the facts in the foregoing article summaries may be made with reference to the following points:

Race: More cases were found among the whites than among the negroes.

Sex: More cases were found among the females of each race than among the males.

Age: More cases developed the disease at ages between 20 and 40 years than at other ages.

Case mortality rate: The case mortality rate is higher among the negroes than among the whites, highest among the colored females, and lowest among the white males.

Case insanity rate: The case rate of insanity incidence is higher among the negroes than among the whites, and higher among the males than among the females.

Marital condition: Among the married and widowed pellagrins the females predominate; the single pellagrins are equally divided among the sexes.

Environment: More cases occurred under conditions of poverty than of comfort, and more under conditions of comfort than of affluence.

Location of homes: More cases developed in persons living in small towns and villages than among those living in the rural districts.

Relation of cases: More cases developed in the immediate vicinity of other cases than otherwise.

Food: The relationship existing between the cases of pellagra in this series and the character of their food supply admits, at present, of no conclusion. In investigations of this character, however, this relationship demands consideration.

Incidence: Pellagra seems to have been on a gradual but constant increase in the districts visited, with the probable exception of the year 1912.

Prevalence: Pellagra is more prevalent than is ordinarily supposed even by the physicians practicing in pellagrous communities, and there are many persons in pellagrous communities who present symptoms of a mild pellagrous condition which do not ordinarily come to the attention of the physician on account of the mild character of these symptoms.

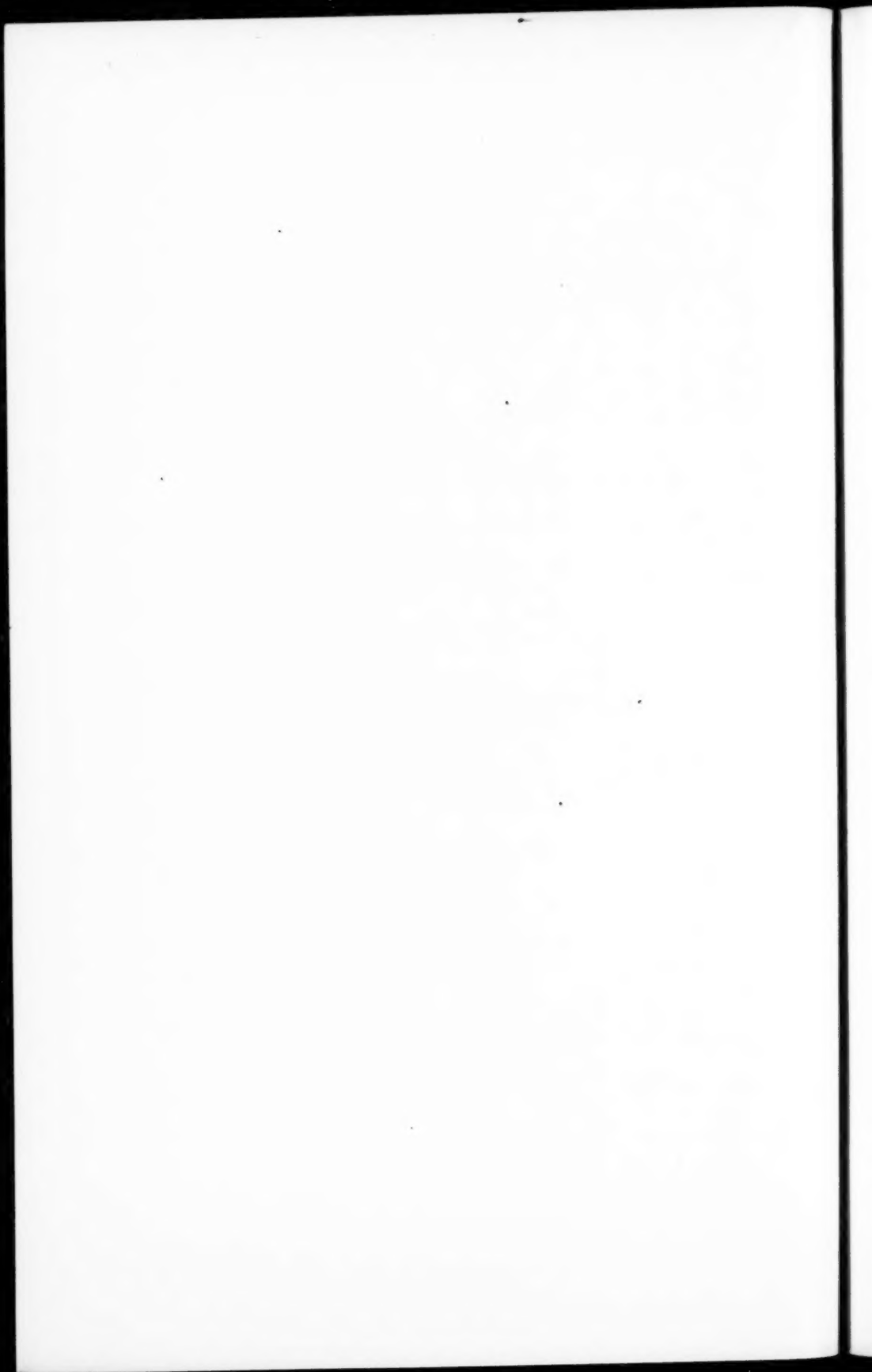
## REMARKS.

Since the deduction of a correct conclusion presupposes the existence of unquestionable premises, no definite conclusion regarding etiology has been drawn from the results of my work. Premises

based on work in other lines seem to be necessary before such a conclusion upon this point can be drawn. The possibility of some insect playing a part in the dissemination of the disease does not seem inconsistent with the facts presented above. From my observations the relationship between food and pellagra seems to be a real one, but whether the character of the food may act only in predisposing to conditions which favor the development of pellagra, or whether certain articles of food act as the real exciting agent, or whether they act only as exaggerators of the symptoms (as the sunlight, for instance), is an open question. It is possible that certain articles of food may act in all three ways. In the present state of this question no investigation of the etiology of pellagra can entirely ignore the character of the food supply used by the people among whom the disease is prevalent. The great prevalence of pellagra in certain districts and the important relation that exists between pellagra and the public health would seem to be ample justification for undertaking on a large scale the herculean task of unraveling the etiology of this puzzling disease, in order that measures based on fact might be instituted for its prevention.

In conclusion I wish to thank the physicians of Kentucky, South Carolina, and Georgia who assisted me during the progress of my work, but I am especially indebted to Dr. J. Harry Hendren, of Cary, Ky., to Dr. H. E. McConnell, of Chester, S. C., to Dr. J. C. Rollins, of Dalton, Ga., and to Drs. W. A. Chapman and Henry Hall, of Cedartown, Ga. The collection of data of the kind presented above depends largely upon the cooperation of the local physicians, and without their assistance and cooperation very little could have been done in this investigation.

I wish also to thank Mr. L. G. Smith, pharmacist, United States Public Health Service, for the preparation of the charts and maps accompanying this article.



# PREVALENCE OF DISEASE.

## IN CERTAIN STATES AND CITIES.

### SMALLPOX.

#### Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alabama (Jan. 1-31):			Pennsylvania—Continued.		
Counties—			Counties—Continued.		
Bibb.....	8	.....	Venango.....	1	.....
Calhoun.....	4	.....	Wayne.....	15	.....
Chilton.....	1	.....	Total.....	21	.....
Dallas.....	3	.....			
Dekalb.....	2	.....	Pennsylvania (Dec. 1-31):		
Escambia.....	4	.....	Counties—		
Greene.....	3	1	Blair.....	1	.....
Hale.....	18	.....	Cambria.....	5	.....
Houston.....	7	.....	Delaware.....	13	.....
Jefferson.....	12	.....	Lacawana.....	5	.....
Lamar.....	2	.....	Venango.....	2	.....
Mobile.....	1	.....	Wayne.....	27	.....
Montgomery.....	11	.....	Total.....	53	.....
Pickens.....	19	1			
Shelby.....	2	.....	South Dakota (Jan. 1-31):		
St. Clair.....	10	.....	Counties—		
Talladega.....	1	.....	Aurora.....	6	.....
Tuscaloosa.....	49	.....	Brown.....	1	.....
Walker.....	7	.....	Brule.....	4	.....
Wilcox.....	2	.....	Campbell.....	1	.....
Total.....	166	2	Codington.....	4	.....
			Davison.....	2	.....
Colorado (Feb. 1-28):			Deuel.....	1	.....
Counties—			Faulk.....	24	.....
Boulder.....	2	.....	Hughes.....	1	.....
Denver.....	20	.....	Kingsbury.....	1	.....
El Paso.....	1	.....	Lyman.....	3	.....
Huerfano.....	3	.....	Marshall.....	17	.....
Mesa.....	10	.....	Minnehaha.....	2	.....
Rio Blanco.....	1	.....	Pennington.....	3	.....
Total.....	37	.....	Turner.....	1	.....
			Union.....	4	.....
Connecticut (Feb. 1-28):			Walworth.....	1	.....
Counties—			Total.....	76	.....
Hartford.....	6	.....			
Windham.....	1	.....	Vermont (Dec. 1-31):		
Total.....	7	.....	Counties—		
			Orange.....	8	.....
Pennsylvania (Nov. 1-30):			Rutland.....	5	.....
Counties—			Washington.....	11	.....
Allegheny.....	2	.....	Total.....	24	.....
Dauphin.....	1	.....			
Lackawanna.....	2	.....	Wyoming Dec. 1-31) <sup>1</sup> .....		

<sup>1</sup> No case.



**Maine—South Thomaston and Warren.**

Acting Assistant Surgeon Adams of the Public Health Service reported March 4, 1913, from Rockland, Me., that 1 case of smallpox had been notified at South Thomaston, and 1 at Warren, Me.

**New York—Niagara Falls.**

Acting Assistant Surgeon Bingham of the Public Health Service reported by telegraph March 9, 1913, that 1 new case of smallpox had been notified in Niagara Falls during the week ended March 8, 1913.

**City Reports for Week Ended Feb. 22, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Auburn, N. Y.	1	.....	Los Angeles, Cal.	4	.....
Cambridge, Ohio	1	.....	Manchester, N. H.	1	.....
Chicago, Ill.	5	.....	Milwaukee, Wis.	14	.....
Columbus, Ohio	2	.....	Moline, Ill.	1	.....
Danville, Ill.	1	.....	Niagara Falls, N. Y.	8	.....
Detroit, Mich.	16	.....	Oakland, Cal.	1	.....
Duluth, Minn.	8	.....	Peoria, Ill.	5	.....
Kalamazoo, Mich.	5	.....	Roanoke, Va.	8	.....
Kansas City, Kans.	1	.....	St. Louis, Mo.	1	.....
Knoxville, Tenn.	18	.....	Spokane, Wash.	3	.....
La Crosse, Wis.	3	.....	Washington, D. C.	2	.....
Lexington, Ky.	3	.....			

**CEREBROSPINAL MENINGITIS.****Arizona.**

The State board of health of Arizona reported by telegraph March 10, 1913, that 26 cases of cerebrospinal meningitis had been notified in Arizona since January 1, 13 of these having occurred in Prescott and vicinity.

**California—Los Angeles.**

Senior Surg. Brooks, of the Public Health Service, reported by telegraph March 8, 1913, that 2 cases of cerebrospinal meningitis, with 2 deaths, had been notified in Los Angeles during the week ended March 8, 1913, making a total of 27 cases and 12 deaths since January 1.

**Cases and Deaths Reported by Cities for Week Ended Feb. 22, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Chicago, Ill.	3	2	New York, N. Y.	5	1
Cincinnati, Ohio.	5	2	Oklahoma, Okla.	1	1
Cleveland, Ohio	2	1	Passaic, N. J.	.....	1
Haverhill, Mass.	1	1	Pittsfield, N. J.	.....	1
Los Angeles, Cal.	3	2	Prescott, Ariz.	2	.....
New Orleans, La.	2	.....			

**POLIOMYELITIS (INFANTILE PARALYSIS).****Cases and Deaths Reported by Cities for Week Ended Feb. 22, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Chicago, Ill.	2	.....	Manchester, N. H.	1	1
Cleveland, Ohio.	2	1	New Orleans, La.	2	.....
Fall River, Mass.	1	.....	New York, N. Y.	2	.....

**ERYSIPELAS.****Cases and Deaths Reported by Cities for Week Ended Feb. 22, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Berkeley, Cal.	1	.....	New Bedford, Mass.	.....	1
Binghamton, N. Y.	3	.....	New Orleans, La.	.....	1
Boston, Mass.	.....	2	New York, N. Y.	.....	13
Bradock, Pa.	1	.....	Northampton, Mass.	.....	1
Bridgeport, Conn.	1	.....	Oklahoma, Okla.	1	.....
Buffalo, N. Y.	6	1	Passaic, N. J.	1	.....
Chicago, Ill.	19	4	Philadelphia, Pa.	22	.....
Cincinnati, Ohio.	8	1	Pittsburgh, Pa.	6	3
Cleveland, Ohio.	11	3	Providence, R. I.	.....	2
Dayton, Ohio.	1	.....	Reading, Pa.	1	.....
Elmira, N. Y.	.....	1	Rutland, Vt.	1	.....
Homestead, Pa.	1	.....	Saginaw, Mich.	1	.....
Kalamazoo, Mich.	2	1	St. Louis, Mo.	18	.....
Los Angeles, Cal.	2	.....	San Francisco, Cal.	7	1
McKeesport, Pa.	1	.....	South Bethlehem, Pa.	2	.....
Milwaukee, Wis.	5	.....	Toledo, Ohio.	.....	1
Newark, N. J.	.....	3	York, Pa.	1	.....

**PLAGUE.****Rats Collected and Examined for Plague.**

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Berkeley	Feb. 15, 1913	.....	132	93	.....
Oakland	do.	11	566	452	.....
San Francisco	do.	21	1,563	1,254	.....
Washington:					
Seattle	do.	.....	786	746	.....

**California—Squirrels Collected and Examined for Plague Infection.**

During the week ended February 15, 1913, there were examined for plague infection 149 ground squirrels from San Joaquin County and 17 from San Benito County. No plague-infected squirrel was found.

## PNEUMONIA.

## Cases and Deaths Reported by Cities for Week Ended Feb. 22, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.		2	Montclair, N. J.		1
Auburn, N. Y.	4	4	Nashville, Tenn.		14
Aurora, Ill.		2	Newark, N. J.		8
Bayonne, N. J.		4	New Bedford, Mass.		5
Berkeley, Cal.		1	Newburyport, Mass.		4
Binghamton, N. Y.	5	1	New Castle, Pa.	1	
Boston, Mass.		38	New Orleans, La.		20
Braddock, Pa.	4		Newport, R. I.	1	1
Brockton, Mass.		5	Newton, Mass.		2
Bridgeport, Conn.		5	New York, N. Y.		214
Brookline, Mass.		1	Niagara Falls, N. Y.		6
Buffalo, N. Y.		10	Norristown, Pa.	2	1
Cambridge, Mass.		2	North Adams, Mass.		3
Cambridge, Ohio.		2	Oakland, Cal.		10
Chelsea, Mass.		5	Oklahoma, Okla.		1
Chicago, Ill.	51	163	Passaic, N. J.		6
Chicopee, Mass.		3	Pawtucket, R. I.		3
Cincinnati, Ohio.		21	Peoria, Ill.		1
Cleveland, Ohio.	53	12	Philadelphia, Pa.	49	94
Cumberland, Md.		1	Pittsburgh, Pa.	32	34
Dayton, Ohio.		7	Pittsfield, Mass.		3
Duluth, Minn.	1	1	Providence, R. I.		15
Elizabeth, N. J.		3	Reading, Pa.	6	6
Elmira, N. Y.	2		Richmond, Va.		9
Erie, Pa.	1		Saginaw, Mich.	2	1
Everett, Mass.		1	Salem, Mass.		2
Fall River, Mass.		13	St. Joseph, Mo.		2
Galesburg, Ill.		2	San Diego, Cal.	1	1
Grand Rapids, Mich.	1	2	San Francisco, Cal.	12	
Harrisburg, Pa.	1	1	Saratoga Springs, N. Y.	1	
Haverhill, Mass.		9	Schenectady, N. Y.	3	3
Homestead, Pa.		3	South Bend, Ind.		2
Jersey City, N. J.		12	South Bethlehem, Pa.	4	2
Kalamazoo, Mich.	4	3	South Omaha, Nebr.	3	
Knoxville, Tenn.		2	Spokane, Wash.		3
La Fayette, Ind.		1	Springfield, Ill.		5
Lancaster, Pa.	2		Springfield, Mass.		11
Lima, Ohio.		3	Taunton, Mass.		1
Los Angeles, Cal.	2	10	Toledo, Ohio.		2
Lowell, Mass.		5	Washington, D. C.		14
Lynn, Mass.		1	Wheeling, W. Va.		5
Malden, Mass.		3	Wilkes-Barre, Pa.		7
Manchester, N. H.	2	2	Wilkesburg, Pa.	5	4
Marlboro, Mass.		1	Wilmington, N. C.		3
Melrose, Mass.		2	Yonkers, N. Y.		9
Moline, Ill.		1	York, Pa.	1	

## TETANUS.

## Cases and Deaths Reported by Cities for Week Ended February 22, 1913.

During the week ended February 22, 1913, tetanus was reported by cities as follows: Newark, N. J., 1 case with 1 death; New Orleans, La., 1 death; Philadelphia, Pa., 2 cases with 2 deaths; St. Louis, Mo., 2 cases with 1 death.

## SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.

## Los Angeles—Measles.

Senior Surg. Brooks, of the Public Health Service, reported by telegraph March 8, 1913, that 134 cases of measles had been notified in Los Angeles during the week ended March 8, making a total of 453 cases, with 4 deaths, since January 1.

## St. Louis—Measles and Diphtheria.

Surg. Carrington, of the Public Health Service, reported March 3, 1913, that during the 11 months ended March 1 there had been notified in the city of St. Louis 4,281 cases of measles, with 37 deaths, and 2,268 cases of diphtheria, with 131 deaths, distributed by months, as follows:

Month.	Measles.		Diphtheria.	
	Cases.	Deaths.	Cases.	Deaths.
1912.				
April.....	224	1	104	6
May.....	157	0	99	6
June.....	48	0	73	6
July.....	38	1	63	5
August.....	12	2	109	9
September.....	11	1	107	11
October.....	45	1	223	19
November.....	240	4	305	20
December.....	375	10	457	22
1913.				
January.....	1,268	10	495	22
February.....	1,863	7	233	5
Total.....	4,281	37	2,268	131

## Cases and Deaths Reported by Cities for Week Ended Feb. 22, 1913.

Cities.	Popula- tion United States, census, 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Boston, Mass.....	670,585	253	43	6	260	4	40	3	61	24
Chicago, Ill.....	2,185,283	228	26	768	6	435	45	148	82	
Cleveland, Ohio.....	560,663	164	51	5	195	3	25	32	14	
New York, N. Y.....	4,766,883	1,836	367	52	552	11	380	20	539	219
Philadelphia, Pa.....	1,549,008	611	60	9	804	6	118	4	72	68
Pittsburgh, Pa.....	533,905	200	23	4	424	7	33	1	40	10
St. Louis, Mo.....	687,029	236	57	7	467	6	30	2	32	20
From 300,000 to 500,000 inhab- itants:										
Buffalo, N. Y.....	423,715	196	8	2	171	2	8	20	15	
Cincinnati, Ohio.....	364,463	144	14	1	157	1	8	34	15	
Detroit, Mich.....	465,766	40	5	58	8	41	25	12		
Los Angeles, Cal.....	319,198	122	7	42	13	41	25	12		
Milwaukee, Wis.....	373,857	115	17	3	27	23	2	14	12	
Newark, N. J.....	347,469	110	31	1	26	16	35	14		
New Orleans, La.....	339,075	185	32	3	118	1	26	20		
San Francisco, Cal.....	416,912	124	11	14	12	23	10			
Washington, D. C.....	331,069	146	1	370	12	1	20	18		
From 200,000 to 300,000 inhab- itants:										
Jersey City, N. J.....	267,779	89	2	2	15	2	4			
Providence, R. I.....	224,326	88	11	7	15	2	4	12		
From 100,000 to 200,000 inhab- itants:										
Bridgeport, Conn.....	102,054	36	7	1	9	1	4	3		
Cambridge, Mass.....	104,839	24	3	20	1	5	7			
Columbus, Ohio.....	181,548	69	4	11	14	8	9			
Dayton, Ohio.....	116,577	42	5	1	1	1	1			
Fall River, Mass.....	119,295	53	4	10	21	5	3	3		
Grand Rapids, Mich.....	112,571	49	2	8	5	2	2	5		
Lowell, Mass.....	106,294	42	6	11	2	9	7			
Nashville, Tenn.....	110,364	60	7	20	1	3	4			
Oakland, Cal.....	150,174	60	7	2	1	11	5			
Richmond, Va.....	127,628	67	5	542	1	2	1	2		
Spokane, Wash.....	104,402	49	4	38	4	1	5			
Toledo, Ohio.....	168,497	61	12	2	6	14	9	5		
Worcester, Mass.....	145,986	61	12	2	6	14	9	5		

## Cases and Deaths Reported by Cities for Week Ended Feb. 22, 1913—Contd.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhab- itants:										
Altoona, Pa.	52,127	17	3				4			
Bayonne, N. J.	55,545	18		1	4		11		7	
Brockton, Mass.	56,878	19	3	1	1		1			
Camden, N. J.	94,538		6		101				5	
Duluth, Minn.	78,466	20			10		4			2
Elizabeth, N. J.	73,409	32	1		12	2			1	
Erie, Pa.	66,525	26	8		26	1			4	1
Harrisburg, Pa.	64,186		7		7		1		2	1
Hartford, Conn.	98,915	68	11	1	18		12		8	5
Johnstown, Pa.	55,482	18	10		48	1				
Kansas City, Kans.	82,331		3		67		1		3	
Lynn, Mass.	89,336	22	1		42		10		3	4
Manchester, N. H.	70,063	32	10		31		1		1	1
New Bedford, Mass.	96,652	25	8		43		15		10	3
Oklahoma City, Okla.	64,205	9	2						1	2
Passaic, N. J.	54,773	18	2		5		3		5	3
Pawtucket, R. I.	51,622	6		1						2
Peoria, Ill.	66,950	23			34	1	5	1		
Reading, Pa.	96,071	45	5	3	136		3			4
Saginaw, Mich.	50,510	13	2		51		2		2	1
St. Joseph, Mo.	77,403	22	2		16		3		3	2
Schenectady, N. Y.	72,826	23	2	1	18		9	1	4	1
South Bend, Ind.	53,684	24	2		2		6	1		1
Springfield, Ill.	51,678	22	5				3			1
Springfield, Mass.	88,926	36	4		35	1	11	2	3	2
Trenton, N. J.	96,815	46	4	1	47		4	2	11	1
Wilkes-Barre, Pa.	67,105	23	2		1		5		8	
Yonkers, N. Y.	79,803	26	5		4		1		5	
From 25,000 to 50,000 inhabitants:										
Auburn, N. Y.	34,668	12			20		13	1		
Aurora, Ill.	29,807	8					1			
Berkeley, Cal.	40,434	8					1		1	
Binghamton, N. Y.	48,443	20	3	1					5	3
Brookline, Mass.	27,792	12	1		7		2			
Chelsea, Mass.	32,452	16	1				2		3	
Chicopee, Mass.	25,401	15								1
Danville, Ill.	27,871	11	1		5		1			
East Orange, N. J.	34,371		1		7		3			1
Elmira, N. Y.	37,176	19	2		33		2		1	2
Everett, Mass.	33,484	8	2		2				1	1
Fitchburg, Mass.	37,826	9	2		69	2			1	
Haverhill, Mass.	44,115	20			87		9		2	2
Kalamazoo, Mich.	39,437	16	1				1		2	
Knoxville, Tenn.	36,346	13			11					3
La Crosse, Wis.	30,417	9	1		1					
Lancaster, Pa.	47,227		4		7				1	
Lexington, Ky.	35,099	8			1		3		3	4
Lima, Ohio.	30,508	12	2		6		3			2
Malden, Mass.	44,404	12	3		11		1		1	1
McKeesport, Pa.	42,694	18	2		16		4			
Newcastle, Pa.	36,280		3		40		1			
Newport, Ky.	30,309	8	1				2	2	1	1
Newton, Mass.	39,806	19	1		21		3		5	
Niagara Falls, N. Y.	30,445	16			85		2			
Norristown, Pa.	27,875	4	3							2
Orange, N. J.	29,630	14	1		3		4		2	2
Pasadena, Cal.	30,291	9					1		1	3
Pittsfield, Mass.	32,121	19	3		4		6		1	1
Portsmouth, Va.	33,190	7	3		2		1			
Racine, Wis.	38,002	6	1				2			
Roanoke, Va.	34,874	10	1		18					2
Salem, Mass.	43,697	16	1	1						2
San Diego, Cal.	39,578	6	2		1				5	5
South Omaha, Nebr.	26,259	10								
Superior, Wis.	40,384	11					1			
Taunton, Mass.	34,259	13			1		5		4	
Waltham, Mass.	27,834	10		1	1				1	2
West Hoboken, N. J.	35,403		3		16		4		1	
Wheeling, W. Va.	41,641	27	7		29		2		1	2
Wilmington, N. C.	25,748	15	2				1			2
York, Pa.	44,750		2		17		1		6	
Zanesville, Ohio.	28,026	16	1				9			3

## Cases and Deaths Reported by Cities for Week Ended Feb. 22, 1913—Contd.

Cities.	Popula- tion, United States census 1910.	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Less than 25,000 inhabitants:										
Alameda, Cal.	23,833	6								
Beaver Falls, Pa.	12,191	1			4	1				
Biddeford, Me.	17,079	4								1
Braddock, Pa.	17,759		2		10		3			
Cambridge, Ohio.	17,327	5	1				1			
Clinton, Mass.	13,075	5	1		13	1				2
Columbus, Ga.	20,554	1								
Columbus, Ind.		3								1
Cumberland, Md.	21,839	7	1		6				3	3
Dunkirk, N. Y.		6			9					
Galesburg, Ill.	22,089	8	1							
Harrison, N. J.	14,489						2			
Homestead, Pa.	18,713	5	2		19					
Kokomo, Ind.	8,261	10	1	1	1		1		2	1
La Fayette, Ind.	20,081	9								1
Marlboro, Mass.		8								1
Massillon, Ohio.	23,830	2								1
Medford, Mass.	23,150	5			23		2		1	1
Melrose, Mass.	15,715	2								
Moline, Ill.	24,190	9								1
Montclair, N. J.	21,450	5	1		1					
Morristown, N. J.	12,507	6	1		1				1	1
Nanticoke, Pa.	18,857	7	1		4		1			
Newburyport, Mass.	19,240	6							1	
North Adams, Mass.	22,019		1		4					1
Northampton, Mass.	19,931	14			1		6		2	2
Ottumwa, Iowa.	23,012	5	2				17			
Palmer, Mass.		4								
Plainfield, N. J.	23,550	4	1		1				1	
Rutland, Vt.	13,546	1	1	1	57					
Saratoga Springs, N. Y.		6			1				1	
South Bethlehem, Pa.		10	5	1	4				1	
Springfield, Ohio.			2				2			
Steelton, Pa.	14,476	3								
Wilksburg, Pa.	18,594	14			9		1	1		1

## **IN INSULAR POSSESSIONS.**

### **HAWAII.**

#### **Plague-Infected Rats Found.**

A plague-infected rat was found February 5, 1913, at Kolopa camp, Paauhua plantation, and one at Honokaa February 13, 1913. These rats were found in stables.

#### **Examination of Rodents.**

At Honolulu rats have been examined for plague infection as follows: Week ended February 1, 1913, 210 rats; week ended February 8, 457 rats; week ended February 15, 1913, 555 rats. No plague-infected rat was found.

At Hilo during the three weeks ended February 15, 1913, there were examined for plague infection 2,722 rats and mongoose. At Honokaa during the same period there were examined 4,164 rats and mongoose.

### **PHILIPPINE ISLANDS.**

#### **Plague.**

Passed Asst. Surg. Heiser, chief quarantine officer and director of health for the Philippine Islands, reports the occurrence of a case of plague at Manila during the week ended January 25, 1913.

### **PORTO RICO.**

#### **Rats Collected and Examined.**

Passed Asst. Surg. Creel reports that during the week ended February 22, 1913, there were examined 1,098 rats collected from various points in Porto Rico and that of these 395 were collected from various parts of San Juan municipality.

No case of plague in man has been notified in Porto Rico since September 12, 1912, and no plague infected rat has been found since December 19, 1912.



## FOREIGN REPORTS.

### AUSTRALIA.

#### Sydney—Examination of Rats.

During the three weeks ended February 1, 1913, there were examined at Sydney for plague infection 649 rats. No plague-infected rat was found.

The last case of plague in man was notified May 29, 1909.

The last plague-infected rat was found April 24, 1910.

### CHINA.

#### Hongkong—Plague—Examination of Rats.

Surg. Brown reports: During the week ended January 18, 1913, 1 case of plague with 1 death was reported in Hongkong.

During the same period there were examined at Hongkong for plague infection 1,781 rats. No plague-infected rat was found.

### CUBA.

#### Transmissible Diseases.

JAN. 1 TO 31, 1913.

Diseases.	New cases.	Deaths.	Remain- ing under treat- ment.
Tuberculosis.....	345	227	3,147
Leprosy.....	5	6	336
Malaria.....	175	15	190
Typhoid fever.....	82	13	55
Diphtheria.....	165	22	36
Scarlet fever.....	103	7	53
Measles.....	68	1	39
Varicella.....	16	0	8
Epidemic dysentery.....	6	6	0
Tetanus in the new born.....	9	9	0

### GREAT BRITAIN.

#### Liverpool—Notification of Tuberculosis.

The following information, dated February 6, was received from Consul Washington:

The voluntary notification of cases of tuberculosis by attending physicians to the medical officer of health of the city of Liverpool was instituted in 1901. This was supplemented on January 1, 1909, by

the regulations of the Government department having jurisdiction in the matter, the local Government board, Whitehall, London, which made compulsory the notification of poor-law cases of tuberculosis. On May 1, 1911, further regulations came into force requiring compulsory notification of cases of tuberculosis under treatment in hospitals and dispensaries. Not until regulations came into force January 1, 1912, was it compulsory for medical practitioners to notify cases of pulmonary tuberculosis. These various regulations have now been revoked and reenacted by the local Government board under the title "The Public Health (Tuberculosis) Regulations, 1912," which became operative February 1, 1913, and which apply to all cases of tuberculosis, whether pulmonary or otherwise.

#### **JAPAN.**

##### **Cholera.**

Surg. Irwin at Yokohama reports: During the week ended February 8 there were reported in Japan 43 cases of cholera, distributed as follows: Tokyo-fu, 1 case; Kanagawa-ken, 1 case; Province of Shizuoka, 27 cases; Province of Chiba, 14 cases.

##### **Taiwan (Formosa)—Cholera and Plague in 1912.**

The following statement was received from Consul Ballantine at Tamsui: During the year ended December 31, 1912, there were reported in the Island of Taiwan (Formosa) 333 cases of cholera with 256 deaths, and 223 cases of plague with 185 deaths.

The population of the island according to the census of 1911 is 3,410,835.

#### **MEXICO.**

##### **Smallpox Conditions on the West Coast.**

The following statement has been received under date of February 16, through Acting Asst. Surg. Gustetter, at Nogales, Ariz.:

Smallpox is present in almost every town on the west coast of Mexico, but in only a few districts has the disease assumed a serious epidemic form and in these districts measures have been taken to prevent its spread. Foci of smallpox are reported in 37 localities. In most of these localities the disease is present in isolated cases. The localities in which serious conditions exist are the Yaqui Valley, which is badly infected, the mortality being greatest on isolated plantations, where the deaths number hundreds, and the Navojoa district, where the disease has been endemic for two years. A recent outbreak occurred in the vicinity of Tepic with 50 reported cases and a high fatality rate.

**VENEZUELA.****Yellow Fever.**

Acting Asst. Surg. Stewart, at La Guaira, reports: Yellow fever has been reported at Caracas as follows: December, 1912, 2 cases with 1 death; January, 1913, 2 cases; February 1 to 13, 1913, 1 case, occurring February 7.

**ZANZIBAR.****Zanzibar—Examination of Rats.**

Consul Hays reports that during the two weeks ended January 21, 1913, there were examined at Zanzibar for plague infection 1,267 rats. No plague-infected rat was found.

**CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.****Reports Received During Week Ended Mar. 14, 1913.****CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Java—				
Batavia.....	Jan. 19-25.....	4	3	Total cases, 43.
Japan.....	Jan. 29-Feb. 4.....			
Chiba ken.....	do.....	14		Total, year 1912: Cases, 333; deaths, 256.
Kanagawa ken.....	do.....	1		
Shidzuoka ken.....	do.....	27		
Taiwan (Formosa).....	do.....			
Tokyo fu.....	Jan. 29-Feb. 4.....	1		

**YELLOW FEVER.**

Places.	Date.	Cases.	Deaths.	Remarks.
Venezuela:				
Caracas.....	Dec. 1-31.....	2	1	
Do.....	Jan. 1-31.....	2		
Do.....	Feb. 7.....	1		

**PLAGUE.**

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Rio de Janeiro.....	Jan. 19-Feb. 1.....	6	1	
China:				
Hongkong.....	Jan. 12-18.....	1	1	Total Jan. 1-Feb. 8: Cases, 43; deaths, 26. Mar. 4, 1 fatal case.
Egypt.....	.....			
Alexandria.....	.....			
Provinces—				
Assiout.....	Jan. 22-Feb. 1.....	5	3	
Benisouef.....	Jan. 22-Feb. 2.....	4	2	
Charkieh.....	Jan. 2-30.....	6	5	
Fayoum.....	Jan. 19-Feb. 11.....	8	5	
Garbieh.....	Jan. 17.....	1		
Girgeh.....	Jan. 23-Feb. 3.....	3		
Menouf.....	Jan. 10-30.....	1		
Minieh.....	Jan. 23-Feb. 5.....	2	1	
India:				
Calcutta.....	Jan. 19-25.....		7	
Japan:				
Taiwan (Formosa).....	.....			Total, year 1912: Cases, 223; deaths, 185.
Philippine Islands:				
Manila.....	Jan. 19-25.....	1		Third quarter, 1912: Cases, 8; deaths, 7.
Provinces.....	.....			

**CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.****Reports Received During Week Ended Mar. 14, 1913—Continued.****SMALLPOX.**

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Department—				
Oran.....	Nov. 1-30.....	33	7	
Do.....	Dec. 1-31.....	19	3	
Do.....	Jan. 1-31.....	11	3	
Argentina:				
Buenos Aires.....	Dec. 1-31.....		5	
Austria-Hungary:				
Fiume.....	Jan. 14-Feb. 10....	2		
Moravia.....	Jan. 17-25.....	2		
Trieste.....	Jan. 19-Feb. 1....	4		
Brazil:				
Pernambuco.....	Jan. 1-15.....		14	
Rio de Janeiro.....	Jan. 19-Feb. 1....	6	3	
British East Africa:				
Mombasa.....	Dec. 1-31.....	12	10	
Canada:				
Ferne.....	Feb. 23-Mar. 1....	12		
Montreal.....	do.....	4		
Quebec.....	Feb. 16-22.....	2		
St. Johns.....	Feb. 23-Mar. 1....	1		
Windsor.....	do.....	2		
China:				
Amoy.....	Jan. 4.....			Present.
An Kho.....	do.....			Epidemic; 2 days' journey from Amoy.
Hongkong.....	Jan. 12-25.....	14	6	
Kulangsu.....	do.....	1		
Nanking.....	Feb. 8.....			Present.
Shanghai.....	Jan. 20-Feb. 9....	4	22	Deaths among natives.
Dutch East Indies:				
Java—				
Samarang.....	Jan. 5-25.....	528	149	
France:				
Nantes.....	Feb. 16-22.....	1		
Paris.....	Feb. 9-15.....	8	1	
Germany.....	do.....	2		
Great Britain:				
New Castle on Tyne.....	do.....	15		
Japan:				
Taiwan (Formosa).....				Year 1912: Cases, 4.
Mexico:				
Chihuahua.....	Feb. 17-Mar. 2....		7	
Philippine Islands:				
Manila.....				Third quarter 1912: Cases, 9; deaths, 0.
Portugal:				
Lisbon.....	Feb. 9-15.....	2		
Siberia:				
Vladivostok.....	Jan. 1-13.....	4		
Switzerland:				
Cantons—				
Basel.....	Feb. 9-15.....	4		
Grisons.....	Jan. 26-Feb. 1....	1		
Turkey in Asia:				
Beirut.....	Feb. 2-15.....	5		
Zanzibar.....	Jan. 15-21.....	7	1	

## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1912, to Mar. 7, 1913.

## CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Bulgaria:				
Eski Saghra.....	Dec. 9.....	2		
Sofia.....	Nov. 21-Dec. 16...	6	1	
Shumla.....	Dec. 30.....	18		
China: Foochow.....	Nov. 20-Dec. 2.....			Isolated cases.
Dutch East Indies:				
Borneo—				
Pontrank.....	Oct. 6.....	1		
Samarinda.....	Oct. 9.....	1		
Singkawang.....	Oct. 8-Nov. 1.....	1	1	
Java—				
Batavia.....	Nov. 9-23.....	32	21	Feb. 6, present.
Madioen.....	Sept. 15-Nov. 2.....	189	103	
Megalang.....	Oct. 7-12.....	9	6	
Paseroean Residency..	Sept. 20-26.....	2	1	
Samarang.....	July 19-Nov. 7.....	515	423	
Surabaya.....	Oct. 16-25.....	2	1	
Sumatra—Jambi.....	Sept. 18-24.....	1		
India:				
Bombay.....	Nov. 17-Jan. 25.....	184	129	
Calcutta.....	Nov. 9-Jan. 18.....		331	
Cochin.....	Oct. 19-Nov. 9.....	6	6	
Madras.....	Nov. 24-Jan. 25.....	26	25	
Negapatam.....	Nov. 11-16.....	9	9	
Rangoon.....	Nov. 1-30.....	2	2	
Indo-China: Saigon.....	Aug. 20-Oct. 27.....	42	38	
Japan.....				Total July 10-Jan. 24: Cases, 2,760; deaths, July 10-Dec. 31, 1,584. Nov. 1-30: Cases, 623; deaths, 397.
Aita Ken.....	Dec. 2.....	1		
Chiba Ken.....	Nov. 23-Jan. 24.....	28		
Fukushima Ken.....	Dec. 5.....	1		
Hiard Islands.....	Sept. 15-Dec. 1.....	30		
Hioga Ken.....	Nov. 27-Dec. 19.....	22		
Hiroshima Ken.....	Nov. 23.....	1		
Ibaraki Ken.....	Dec. 6.....	2		
Iwate Ken.....	Dec. 16.....	1		
Kanagawa Ken.....				Total Nov. 23-Jan. 24: Cases, 54.
Yokohama.....	Nov. 24-Jan. 14.....	22		Sept. 25-Dec. 7: 9 cases from vessels.
Kochi Ken.....	Nov. 28-Dec. 4.....	3		
Minami Tokaki gun.....	Sept. 15-Dec. 2.....	40		
Nagasaki Ken.....				Nagasaki Ken and outlying islands Sept. 15-Dec. 2: Cases, 188; deaths, 134, including previous reports.
Nagasaki city.....	Sept. 15-Dec. 2.....	10	4	
Osaka Fu.....	Nov. 23-Dec. 3.....	14		
Saga Ken.....	do.....	5		
Sasebo.....	Sept. 15-Dec. 2.....	7		
Shidzuoka Ken.....	Dec. 3-Jan. 24.....	27		
Taiwan (Formosa).....				Total Nov. 3-23: Cases, 48; deaths, 42.
Tokushima Ken.....	Sept. 15-Dec. 1.....	65		Not previously reported.
Tokyo Fu.....	Nov. 23-Jan. 24.....	107		
Tokyo.....				Oct. 2-Dec. 7: Cases, 273, and in vicinity, 342.
Wakamatsu Ken.....	Nov. 26.....	1		
Russia:				
Odessa.....	Jan. 8-21.....	5	2	Nov. 18-20: 1 case from s. s. Bosnian from Constantinople. Confined in the quarantine barracks.
Siam:				
Bangkok.....	Oct. 13-Jan. 4.....		6	
Straits Settlements—Singapore.	Nov. 17-23.....	2	2	
Turkey in Asia.....				Total, Nov. 17-23: Cases, 160; deaths, 218.
Adana—				
Adana.....	Nov. 17-Dec. 2.....	2	2	
Aleppo—				
Aleppo.....	Nov. 24-Dec. 2.....	3	3	
Alexandretta.....	do.....	3	2	
Angora—				
Angora.....	Nov. 24-Dec. 11.....	29	23	
Balikesir.....	Nov. 24-Dec. 2.....		1	
Beirut—				
Merdjion.....	Dec. 3-11.....		15	
Tabariyeh.....	Dec. 13-22.....			Present.

**CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.****Reports Received from Dec. 27, 1912, to Mar. 7, 1913—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
<b>Turkey in Asia—Continued.</b>				
Brusa.....	Nov. 17-Dec. 11....	26	38	
Castamoni.....	Nov. 17-Dec. 2....	6	4	
Dierbekir.....	do.....	8	2	
Hedjaz—				
Jedda.....	Nov. 25-Dec. 14....	395	393	Among returning pilgrims.
Medina.....	Dec. 3-11.....		6	
Mekka.....	Nov. 17-23.....	111	172	Dec. 3-11: Deaths, 3,007.
Ismidt.....	Nov. 17-Dec. 2....	3	1	
Mosul.....	do.....		2	
Sinope.....	Dec. 3-11.....	1	4	
Smyrna.....	Nov. 17-Dec. 2....	3	1	
Tarsus.....	Nov. 24-Dec. 2....	2	1	
<b>Turkey in Europe:</b>				
Constantinople.....	Dec. 3-Jan. 28....	1,598	787	Total, Nov. 5-Jan. 28: Cases, 2,515; deaths, 1,245.
Zanzibar.....	Nov. 8-Dec. 21....	131	130	Total, Aug. 5-Dec. 23: Cases, 943; deaths, 912, including previous reports from Mweru, Chwaka, and Mokotoni. Chwaka district, Oct. 4-Dec. 31, 332 cases, not included in previous reports.
At sea.....				Nov. 18-20: 1 fatal case on s. s. Bosnian, en route from Constantinople to Odessa.

**YELLOW FEVER.**

<b>Brazil:</b>				
Bahia.....	Jan. 24-Feb. 23....	9	1	
Manaos.....	Jan. 5-Feb. 1....	4	4	
<b>Ecuador:</b>				
Agua Piedra.....	Dec. 1-31.....	7	4	
Bucay.....	Nov. 15-Dec. 31....	3	2	
Duran.....	Nov. 1-Dec. 31....	3	3	
Guayaquil.....	do.....	25	16	
Do.....	Feb. 18-24.....	16	11	Total Jan. 1-Feb. 24: Cases, 124; deaths, 69.
Milagro.....	do.....	2	2	
Naranjito.....	do.....	3	2	
<b>Senegal:</b>				
Dakar.....	Dec. 7.....			Present.
<b>Venezuela:</b>				
Caracas.....	Nov. 1-30.....	7	1	In September 2 deaths and in October 1 death not previously reported.

**PLAGUE.**

<b>Afghanistan:</b>				
Tchehel-Bagdareh.....	Sept. 1-30.....			And vicinity 100 deaths daily. Present to Oct. 29.
<b>Brazil:</b>				
Bahia.....	Jan. 12-25.....	4	1	
Pernambuco.....	Nov. 1-Dec. 31....		9	
Rio de Janeiro.....	Nov. 3-Jan. 18....	11	6	Year 1912: Cases, 21.
Santos.....	Dec. 1.....	2	2	
<b>British East Africa:</b>				
Kiambu.....	Nov. 16-Oct. 21....	2		
Kisumu.....	Dec. 8-28.....	7		
Mombasa.....	Oct. 1-Dec. 25....	16	12	Free Nov. 18.
Nairobi.....	Nov. 16-Jan. 13....	5	1	
<b>Canary Islands:</b>				
Teneriffe—				
Santa Cruz.....	Feb. 21-27.....		5	
<b>Chile:</b>				
Iquique.....	Jan. 8-19.....	7	4	
Taltal.....	Oct. 22-28.....	3		
<b>China:</b>				
Amoy.....	Jan. 17.....			Present and in vicinity.
Kulangsu.....	do.....	3		International settlement of Amoy.
Hoihow.....	Nov. 1-30.....			Do.

## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 27, 1912, to Mar. 7, 1913—Continued.

## PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China—Continued.				
Manchuria.....	Dec. 14.....			Present along the railway between Harbin and Chang-Chun.
Pakhoi.....	Dec. 1-31.....	30		
Shanghai.....	Nov. 18-Dec. 15.....		2	Dec. 18, present in vicinity of the French settlement.
Swatow.....				Jan. 9, in vicinity.
Dutch East Indies:				
Java—				
Kediri.....	Oct. 6-Dec. 16.....	105	103	
Madison.....	do.....	66	64	
Paserocean Residency.....	do.....	244	247	
Surabaya.....	do.....	10	10	
Ecuador:				
Duran.....	Nov. 1-Dec. 31.....	4	1	
Guayaquil.....	do.....	139	52	
Do.....	Feb. 18-24.....	22	11	Jan. 1-Feb. 24: Cases, 123; deaths, 61.
Milagro.....	Dec. 1-31.....	8	1	Total Jan. 1-Dec. 31: Cases, 884, deaths, 441. Jan. 1-16: Cases, 11; deaths, 8.
Egypt.....				
Cairo.....	Dec. 30.....	1	1	
Port Said.....	Dec. 29.....	1	1	
Do.....	Jan. 1-2.....	2	1	
Provinces—				
Behera.....	Nov. 29-Dec. 12.....	2	1	
Do.....	Jan. 1-2.....	2	1	
Charkieh.....	Nov. 29-Dec. 12.....	3	2	
Galioubeh.....	Jan. 1-7.....	1	1	
Garbieh.....	Jan. 1-16.....	1	1	
Do.....	Nov. 23-Dec. 17.....	3		
Girgeh.....	Jan. 1-3.....	1	1	
Do.....	Dec. 21-25.....	1	1	
Menouf.....	Jan. 1-9.....	5	3	
Do.....	Oct. 1-Dec. 31.....	13	7	
Minieh.....	Nov. 28-Dec. 29.....	7	4	
Hawaii:				
Kukuihaele.....	Jan. 11-31.....	2	2	
India:				
Bombay.....	Nov. 17-Jan. 25.....	61	52	
Calcutta.....	Nov. 9-Jan. 18.....		67	
Madras.....	Dec. 29-Jan. 4.....	1	1	
Karachi.....	Nov. 19-23.....	2	2	
Rangoon.....	Oct. 1-Nov. 30.....	68	68	
Provinces.....				Total Oct. 27-Dec. 28: Cases, 25,212; deaths, 19,863.
Delhi.....	Oct. 27-Dec. 28.....	31	14	
Bombay.....	do.....	6,785	5,121	
Madras.....	do.....	1,833	1,337	
Bengal.....	do.....	60	59	
Bihar and Orissa.....	do.....	1,269	1,025	
United Provinces.....	do.....	7,844	6,001	
Punjab.....	do.....	952	709	
Burma.....	do.....	95	85	
Central Provinces.....	do.....	404	301	
Mysore.....	do.....	1,506	1,114	
Hyderabad.....	do.....	1,498	1,212	
Central India.....	do.....	70	60	
Rajputana.....	do.....	2,862	2,824	
Kashmir.....	do.....	3	1	
Indo-China: Saigon.....	Aug. 20-Dec. 16.....	58	36	
Mauritius.....	Oct. 11-Dec. 19.....	202	129	
Morocco: Rabat.....	Nov. 1.....	3		Among the military.
New Caledonia:				
Numea.....	Sept. 17-Oct. 17.....	8	5	
Do.....	Oct. 29-Dec. 2.....			7 cases with 2 deaths among Europeans and 22 fatal cases among natives.
Peru:				
Departments—				
Ancachs.....	July 1-31.....	4		
Do.....	Aug. 1-31.....	4	3	
Arequipa.....	July 1-31.....	7	2	Mollendo, Nov. 17-Jan. 12: Cases, 15; deaths, 4. Jan. 21. 2 cases, with 1 death.
Do.....	Aug. 1-31.....	5	3	
Callao.....	July 1-31.....	1	1	Present in September; Dec. 2-Jan. 12: Cases, 7.



**CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.****Reports Received from Dec. 27, 1912, to Mar. 7, 1913—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Departments—Continued.				
Ferrinhafe	Dec. 23-Jan. 12	1		
Ica	do	1		
Lambayeque	Dec. 2-22	7		Present in September.
Jayanca	do			Present.
Libertad	July 1-31	8	2	
Do	Aug. 1-31	12	7	
Cosma	Dec. 2-22			Do.
Paijan	do			Do.
Salaverry	Dec. 23-Jan. 12	1		
San Pedro	Dec. 2-Jan. 12	27		
Trujillo	do	44		
Lima	July 1-31	3	2	
Do	Aug. 1-31	4	2	Dec. 2-22; Cases, 2.
Piura				
Catacaos	Dec. 2-Jan. 12			Present.
Paíta	do			Do.
Piura	Dec. 23-Jan. 12			Do.
Sulanna	Dec. 2-22			Do.
Philippine Islands:				
Manila	Nov. 10-Dec. 28	13	10	
Russia:				
Don, territory	Nov. 1-Jan. 12			In 6 localities. 38 cases with 22 deaths.
Hutor Popova (estate)	Nov. 1-15	20	12	Esaoul district.
Moscow	Dec. 29-Jan. 11	3	1	
Transbaikal district—				
Verneudinsk	Oct. 18-28	3	3	Near Nerchinsk.
Trans-Caspian Ty. Merv	Dec. 9-21	29	29	Pneumonic.

**SMALLPOX.**

Arabia: Aden	Jan. 14-20	1		
Abyssinia: Adis Ababa	Nov. 24-Dec. 21			Present.
Algeria:				
Departments—				
Algiers	Oct. 1-31	11		
Constantine	do	11		
Oran	do	118		
Argentina: Buenos Aires	Nov. 1-30		2	
Austria-Hungary:				
Galicia	Nov. 10-Dec. 7	3		
Trieste	Dec. 8-Jan. 18	22		
Brazil:				
Para	do	2		
Pernambuco	Nov. 1-Dec. 31		135	
Rio de Janeiro	Nov. 3-Jan. 18	21	7	
British Columbia: Vancouver	Feb. 2-8	1		
British East Africa: Mombasa	Dec. 1-21	5		
Canada:				
Ontario—				
Hamilton	Jan. 1-31	31		
Ottawa	Jan. 4-Feb. 22	30		
Toronto	Dec. 1-Feb. 15	8		
Windsor	Feb. 9-15	2		
Quebec—				
Montreal	Dec. 15-Feb. 24	93		
Quebec	Dec. 15-Feb. 15	23		
St. Johns	Jan. 12-15	16		
Chile: Punta Arenas	Oct. 31-Nov. 30	3		Oct. 31, 1 case in vicinity.
China:				
Amoy	Jan. 16			Present.
Chungking	Nov. 3-Jan. 4			Do.
Dalny	Jan. 12-18	1	1	
Hankow	Dec. 29-Jan. 4	1		
Hoihow	Jan. 3			Do.
Hongkong	Nov. 24-Jan. 11	9	7	
Nanking	Dec. 7			Do.
Shanghai	Nov. 18-Jan. 19	19	96	Deaths among natives.
Tientsin	Nov. 17-Dec. 14		2	
Costa Rica: Limon	Feb. 1	2	2	

## CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

## Reports Received from Dec. 27, 1912, to Mar. 7, 1913—Continued.

## SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Java—				
Batavia.....	Nov. 9-Jan. 4.....	26	7	Jan. 5-11, 10 cases, with 5 deaths in the district, mainly in Samarang.
Samarang.....	Oct. 4-24.....	57	23	
Egypt:				
Alexandria.....	Dec. 9-Jan. 28.....	6	1	
Cairo.....	Nov. 12-Feb. 21.....	9	3	
Port Said.....	Dec. 3-31.....	1	1	
France:				
Marseille.....	Nov. 1-Jan. 31.....	2	3	
Nantes.....	Jan. 5-18.....	2		
Paris.....	Dec. 1-Feb. 8.....	23		
Germany.....				Total: Nov. 24-30, 5 cases not included in report, p. 2231, vol. xxvii; Dec. 1-Feb. 8, 18 cases.
Breslau.....	Jan. 19-25.....	1		
Hamburg.....	Jan. 10-25.....	2		
Gibraltar.....	Dec. 9-15.....	1		
Great Britain: Liverpool.....	Jan. 1-4.....	1		
Honduras: Trujillo.....	Feb. 2-8.....	1		
India:				
Bombay.....	Nov. 17-Jan. 25.....	21	7	
Calcutta.....	Dec. 1-Jan. 18.....	11	14	
Karachi.....	Dec. 1-Jan. 21.....	9	1	
Madras.....	Dec. 1-Jan. 25.....	11	5	
Rangoon.....	Oct. 1-Nov. 30.....	11	3	
Indo-China: Saigon.....	Aug. 20-Dec. 23.....	3	3	
Italy:				
Palermo.....	Dec. 15-Feb. 8.....	6		
Turin.....	Feb. 3-9.....	1		
Japan.....				Jan. 1-Nov. 30, 1911: Cases, 14; death, 1.
Nagasaki.....	Nov. 1-30.....	1		
Yokohama.....	Jan. 1-13.....	2		From s. s. Pera from London via ports.
Mexico.....				Feb. 16: Cases, 1,500 to 2,000 with 10 per cent of deaths, mainly along the western coast. Jan. 30-Feb. 16: Present in Aguirre, Cajame, Corral, Esperanza, Navojca, Puga, and Tarin.
Aguascalientes.....	Dec. 9-Feb. 16.....		10	
Chihuahua.....	Dec. 9-Feb. 16.....		7	
Durango.....	Dec. 1-Jan. 31.....		65	
Guadalajara.....	Jan. 5-11.....	1		
Mazatlan.....	Jan. 1-7.....	2		
Mexico.....	Nov. 17-Jan. 4.....	36	15	
Salina Cruz.....	Nov. 17-Jan. 25.....	6	2	
San Luis Potosi.....	Sept. 15-21.....	1		
Sonora—				
Agua Zarca.....	Jan. 30.....	2		
Nogales.....	do.....	1		
Veracruz.....	Jan. 26-Feb. 8.....	3	1	1 case imported from Pasco del Macho.
Netherlands: Rotterdam.....	Dec. 22-28.....		1	
Peru:				
Callao.....	Sept. 1-14.....			Present.
Lima.....	do.....			Do.
Mollendo.....	Nov. 24-Dec. 7.....	5	1	
Salaverry.....	Dec. 4-11.....	1		
Philippine Islands: Manila.....	Dec. 21.....			1 case removed from s. s. Mauban to the San Lazaro Hospital.
Portugal: Lisbon.....	Dec. 1-Feb. 8.....	41		
Roumania.....				Total, Oct. 1-31: Cases, 6.
Russia:				
Batoum.....	Dec. 1-31.....	1		
Libau.....	Dec. 16-Jan. 4.....	2		
Moscow.....	Dec. 8-Jan. 25.....	7	2	
Odessa.....	Nov. 17-Jan. 18.....	8	3	
St. Petersburg.....	Nov. 24-Dec. 28.....	96	10	
Warsaw.....	Sept. 22-Nov. 23.....	15	2	
Siberia—				
Omsk.....	Jan. 1-27.....	7		
Vladivostok.....	Dec. 15-28.....	4	1	

**CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.****Reports Received from Dec. 27, 1912, to Mar. 7, 1913—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Servia: Belgrade.....	Dec. 22-28.....	2	.....	
Siam: Bangkok.....	Nov. 10-Jan. 4.....	.....	5	
Siberia: Vladivostok.....	Oct. 28-Dec. 28.....	4	3	
Spain:				
Almeria.....	Dec. 1-Jan. 31.....	.....	54	
Barcelona.....	Dec. 1-Feb. 1.....	.....	96	
Cadiz.....	Nov. 1-Dec. 31.....	.....	7	
Madrid.....	.....do.....	.....	34	
Malaga.....	Dec. 1-31.....	.....	1	
Seville.....	Dec. 31-Jan. 31.....	.....	43	
Valencia.....	Nov. 14-Feb. 8.....	.....	47	
Straits Settlements: Singapore..	Nov. 24-Jan. 4.....	2	1	
Sweden: Stockholm.....	Oct. 8-21.....	3	.....	
Switzerland:				
Cantons—				
Aargau.....	Dec. 15-Jan. 18.....	2	.....	
Basel.....	Nov. 14-Feb. 1.....	16	.....	
Grisons.....	Dec. 1-Jan. 25.....	14	.....	
Turkey in Asia: Beirut.....	Dec. 8-Feb. 1.....	57	11	
Turkey in Europe: Constantinople.	Dec. 1-Feb. 15.....	.....	109	
Uruguay: Montevideo.....	Feb. 18.....	.....	.....	Present.
Zanzibar.....	Nov. 8-Jan. 14.....	13	1	

# SANITARY LEGISLATION.

## STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

### MISSISSIPPI.

**Appropriations for the Establishment of a Bureau of Vital Statistics and for the Eradication of Certain Communicable Diseases (Laws of 1912, ch. 62, Approved March 14, 1912).**

SEC. 1. *Be it enacted by the Legislature of the State of Mississippi, That* the following sums of money, or so much thereof as may be necessary, be, and the same is hereby, appropriated out of any money in the State treasury not otherwise appropriated:

For the establishment of a bureau of vital statistics for the year 1912.....	\$6,000
For the eradication of tuberculosis, typhoid fever, malarial fever, pellagra and other infectious diseases, year 1912.....	10,000
For the eradication of hook-worm diseases, and bacteriological and chemical work for the investigation of any disease, year 1912.....	9,000
For the eradication of tuberculosis, typhoid fever, malarial fever, pellagra and other infectious diseases, year 1913.....	10,000
For the eradication of hook-worm diseases and bacteriological and chemical work, for the investigation of any disease, year 1913.....	9,000

### WASHINGTON.

**Communicable Diseases—Regulation and Quarantine of (Regulations State Board of Health Adopted July 15, 1912).**

SEC. VI.—1. *Asiatic cholera, plague, typhus fever, and yellow fever*, must be strictly quarantined with a day and a night guard, and reported at once by wire to the State commissioner of health, when special instructions will be furnished.

2. *Scarlet fever, scarlatina, and scarlet rash.*

(a) All cases of scarlet fever, scarlatina, or scarlet rash must be quarantined until the health officer is satisfied that desquamation has absolutely ceased, and all evidence of sore throat and acute suppuration has disappeared, *but in no case shall quarantine be raised or the case released until at least six weeks shall have elapsed after the first symptoms appeared.*

(b) All children exposed to scarlet fever, scarlatina, or scarlet rash, who have not previously had scarlet fever, scarlatina, or scarlet rash, must be quarantined for 10 days after the last exposure.

(c) All bedding, clothing, dishes, and other articles used in the sick room must be disinfected before being removed from the sick room. For this purpose a solution of formalin, or boiling water, can be used.

(d) Upon recovery of the patient, the house or the quarantined premises, together with the contents, must be disinfected before the quarantine is raised.

(e) Every patient must be given a bath in a solution of bichloride of mercury of 1-2000, or its equivalent, and clothed in clean, unexposed clothing, before being discharged from quarantine.

(f) Any teacher in a public school who has been living or visiting with any family in which a case of scarlet fever develops, must not return to her school duties until after 10 days have elapsed from the date of the last exposure.

3. *Diphtheria, membranous croup.*

(a) All cases of diphtheria or membranous croup must be quarantined until two consecutive *bacteriological cultures from the pharynx and nasal passages, the last of which must be taken by a representative of the health office, show the throat tissues and other membranes* of the patient to be free from the Klebs-Loeffler bacillus, and at the same time at least one negative culture must be obtained from the throats and nasal passages of all other individuals under quarantine with the patient. Or if such examination be not possible, the quarantine shall be maintained for six weeks from the beginning of the disease, and as long thereafter as false membrane or evidence of sore throat or any discharge from eyes, ears, nose, or throat remain.

Culture tubes will be furnished and examinations made free of charge for counties and cities that do not maintain a bacteriological laboratory, upon application to the office of the State board of health.

(b) All persons exposed to diphtheria or membranous croup, who have not previously had diphtheria or membranous croup, must be quarantined for 10 days after the last exposure; or, as an alternative procedure, all persons exposed to diphtheria may be released from quarantine upon the returning of negative cultures from the throat and nasal passages.

(c) All bedding, clothing, dishes, and other articles used in the sick room must be disinfected before being removed from the sick room. For this purpose a solution of formalin, or boiling water, can be used.

(d) Upon recovery of the patient, the house or the quarantined premises, together with the contents, must be disinfected before the quarantine is raised.

(e) Every patient must be given a bath in a solution of bichloride of mercury of 1-2000, or its equivalent, and also clothed in clean, unexposed clothing, before being discharged from quarantine.

(f) Any teacher in a public school who has been living or visiting with any family in which a case of diphtheria develops must not return to her school duties until 10 days have elapsed from the date of the last exposure.

4. *Smallpox.*—(a) In cases of smallpox it shall be the duty of all health officers to investigate all alleged instances of smallpox infection or smallpox exposure which come to their knowledge, when such are not attended by a qualified physician.

(b) All physicians must report immediately to the health officer within whose jurisdiction such cases occur, informing him of the name and address of the patient, and in addition those who have been exposed, so far as such shall be known to the physician.

(c) Whenever such can be done the patient shall be removed to an isolation hospital or other suitable place. If this is not possible, the patient shall be isolated as far as circumstances will permit from the other persons occupying the same premises, in a separate room wherever possible.

(d) A placard shall be posted in a prominent place on such premises stating that smallpox exists on the premises and all persons exposed shall be advised to be immediately vaccinated, unless they are protected by a recent successful vaccination or a previous attack of smallpox.

(e) On the appearance of smallpox in any community it shall be the duty of the local health officer or officers (*i. e.*, both city and county) to use all diligence in warning the public of its presence and in instructing the public as to the proper procedure to be followed to prevent its spread.

(f) The State commissioner of health shall prepare and furnish to local health officers instructions as to warning and advising the public.

(g) It shall be the duty of all health officers to vaccinate free of charge any persons who may apply to them for vaccination when smallpox actually exists in their jurisdiction, but not at other times, and all expenses for vaccines and dressings for this procedure shall be paid for by the city or county for which such public service is rendered.

(h) No child in a community in which smallpox actually exists shall be permitted to attend any public, parochial, or private school, without presenting satisfactory evidence of either having previously had smallpox or of having been *successfully* vaccinated within seven years.

(i) Before the removal of the placard declaring premises to be infected with smallpox, the health officer within whose jurisdiction such premises are, shall supervise in person or by deputy the thorough disinfection of the dwelling and contents.

(j) *Provided*, That the foregoing rules shall not be interpreted to prohibit the boards of health of any county or first-class city from adopting rules and regulations for the establishment of quarantine of smallpox if they so desire.

(k) *Provided further*, That if any county or first-class city in the State of Washington adopt rules and regulations for the quarantine of smallpox, as provided in the preceding paragraph, the responsibility for enforcement of any such local rules and regulations shall rest on the local authorities alone and not upon the State board of health or other State officer.

5. *So-called cedar, Cuban, dove, Japanese, kangaroo, or Manila itch.*—These being only different names for mild forms of smallpox, must be considered smallpox and treated as such.

6. *Chickenpox in adults.* Chickenpox in adults occurs occasionally, but, as this name is frequently given to evade the diagnosis of mild cases of smallpox, it is hereby required that every case be reported and treated the same as smallpox.

7. *Measles.*—(a) All cases of measles must be reported to the health officer and none of the children of the family in which the disease exists, except those who have previously had the disease, shall attend any public, parochial, or private school or Sunday school for two weeks after the beginning of the last case in the family.

(b) All cases of measles must be handled according to the general rules laid down under the section on "Isolation."

(c) *Provided*, That the above rules governing measles shall not be construed as prohibiting any city or county board of health from adopting a stricter form of quarantine if deemed advisable or necessary.

(d) Upon the first appearance of measles in an epidemic form, the health officer shall issue a warning to the public, pointing out the great seriousness of this disease, and urging all parents not to deliberately allow their children to become exposed to the disease.

(e) Since it has been conclusively established that measles is infective before the stage of eruption, health officers during an epidemic shall carefully instruct principals and teachers concerning the preeruptive symptoms of measles, and principals and teachers shall exclude all children showing suspicious preeruptive symptoms or rash, and shall report daily the names and addresses of all such children to the health officer for investigation.

(f) The question of closure of schools during an epidemic of measles shall be decided by the local health officer.

8. *German measles.*—Since German measles is often confused with the mild form of measles, it shall be handled in the same manner as measles, except that isolation may be removed in one week from the beginning of the disease at the discretion of the health officer.

9. *Chickenpox in children.*—(a) All cases of chickenpox in children shall be excluded from school and other measures carried out as laid down in section on "Isolation."

(b) Other children of the family shall not be excluded from school.

10. *Whooping cough*.—(a) All cases of whooping cough shall be handled according to the general rules for diseases subject to isolation.

(b) *Provided*, That isolation shall be maintained for at least 5 weeks from the beginning of the disease in all cases, and longer if necessary until the "whoop" has entirely ceased.

(c) Other children of the family who have had the disease and entirely recovered shall be allowed to attend school.

(d) *Provided*, That permission for other children in the house who have had the disease, to attend any public, parochial, private or Sunday school, or to associate with other nonimmune children in any way, may be withheld by the health officer whenever in his judgment the public health demands it, as in a first case in a community, or where the history of other children having had the disease is uncertain.

11. *Rocky Mountain, tick, or spotted fever*.—(a) Cases suspected of being Rocky Mountain, tick, or spotted fever shall at once be isolated.

(b) If upon subsequent investigation the case proves to be one of Rocky Mountain, tick, or spotted fever, the State commissioner of health shall thereupon direct whatever measures of isolation or quarantine the case may require.

12. *Infantile paralysis*.—(a) All cases of infantile paralysis shall be handled according to the rules governing cases subject to isolation.

(b) The patient shall be subject to isolation for at least 21 days from the beginning of illness.

(c) Individual reports of all cases of infantile paralysis shall be made by the attending physician to the State commissioner of health.

(d) Other children in a family where there is a case of infantile paralysis shall not attend school until isolation measures have been removed and premises properly disinfected.

(e) All discharges from throat and nose shall be immediately disinfected.

13. *Epidemic cerebrospinal meningitis*.—(a) Isolation measures shall be continued until the recovery of the patient from all acute symptoms, but in no case shall this period be less than 14 days from onset of disease, whether termination be by recovery or death.

(b) No other children shall attend school from any house where there is a case of epidemic cerebrospinal meningitis until 10 days after all restrictions have been removed from the house by the health officer and the premises have been thoroughly disinfected.

(c) Individual reports of all cases of epidemic cerebrospinal meningitis shall be made by the physician to the State commissioner of health.

(d) All doubtful cases of cerebrospinal meningitis shall be subject to temporary isolation and shall be handled as of the epidemic type until the attending physician and health officer determine it to be not of the epidemic type.

14. *Ophthalmia neonatorum*.—(a) All cases of ophthalmia neonatorum shall be reported at once to the health officer in whose jurisdiction the cases occur.

(b) Since it has been clearly demonstrated that a considerable per cent of cases of ophthalmia neonatorum are due to other pyogenic organisms than the gonococcus, and since the prophylactic value of silver nitrate is fully proven in all cases, therefore all physicians and midwives are urged to use a 1 per cent solution of silver nitrate in the eyes of all newborn infants.

(c) All midwives, nurses, or other persons having charge of a newborn infant, shall report immediately to the health officer or a legally qualified physician if any pus or secretion form in the eyes or on the eyelids, or if one or both eyes become reddened and swollen within two weeks from birth.



15. *Typhoid and paratyphoid fever.*—(a) All cases of typhoid fever and paratyphoid fever must be reported to the health officer, who must placard all houses containing a case of typhoid fever and leave printed directions for proper disinfection.

(b) All excreta from the patient must be efficiently disinfected with quicklime or by boiling. All bedding, dishes and other infected articles must be thoroughly disinfected with a solution of formaldehyde or by boiling.

(c) The sources of infection must be sought for by the health officer and attending physicians in all cases, and when found, measures must be taken to prevent any further infection.

(d) All doubtful cases should be subjected to blood examination. Capillary tubes and directions for collection of blood samples will be sent upon request and the examination and report of the results will be made promptly.

NOTE.—Since a Widal reaction does not develop until the end of the second week of the disease, as a general rule, negative reports on blood specimens collected before that date should be supplemented by a second specimen collected after the second week.

(e) Whenever a person is suspected of being a chronic typhoid carrier, this fact must be reported, in detail, to the State commissioner of health, who will give special directions for handling the case.

(f) Whenever the attending physician or local health officer has reason to believe that a given case is a case of paratyphoid fever rather than typhoid fever, he shall make such an explanation whenever blood is sent to the State board of health laboratory for examination.

(g) The general restrictions governing diseases subject to isolation shall govern cases of typhoid fever, except that persons occupying the same premises who are not in immediate attendance upon the patient may come and go without restrictions.

(h) Health officers and physicians may obtain antityphoid vaccine from the State board of health laboratory for prophylactic use, upon request.

(i) In all cases where persons are ill with typhoid in a hotel, lodging house, or camp, the health officer shall strictly forbid any person having to do with the care of the patient from working at anything having to do with the preparation or handling of food. As far as possible, this same rule shall prevail in private families.

(j) In all cases of typhoid in the summer months, the health officer shall order and enforce screening of the apartment in which the patient is confined, unless the entire house is already screened. If the householder or person responsible is unable to do this for reasons of poverty, the health officer shall do so at the public expense.

(k) All cases reported as typho-malaria or as malaria, if same can not be confirmed by microscopic examination of blood, shall be handled as typhoid.

16. *Malaria.*—(a) All cases of malaria must be reported to the health officer in whose jurisdiction such cases occur.

(b) All cases of malaria must be isolated as long as the disease continues in an acute form.

(c) Since malaria is a comparatively rare disease in this State, in order to differentiate carefully between malaria and typhoid fever, the health officer is directed to send both a specimen of blood for Widal reaction and a blood smear to the State board of health laboratory for those cities and counties which do not maintain their own laboratory.

17. *Anthrax and glanders in human beings.*—(a) All cases of suspected anthrax and glanders in human beings shall be reported to the health officer in whose jurisdiction they belong.

(b) All health officers shall report individual cases of anthrax and glanders in human beings to the State commissioner of health.

(c) All cases of anthrax and glanders in human beings shall be handled according to the rules for diseases requiring isolation until the termination of the case.

18. *Tuberculosis*.—(a) All cases of pulmonary or laryngeal tuberculosis must be reported to the health officer and by him to the State commissioner of health, who will furnish physicians and health officers circulars of information upon request.

(b) All health officers are charged with the full enforcement of the law regulating the reporting of cases of tuberculosis.

(c) All physicians shall report immediately to the health officer upon the death or removal of any patient under their charge suffering from pulmonary or laryngeal tuberculosis, and the health officer shall thereupon supervise the thorough disinfection of such premises; neither shall such premises be rented or leased until such disinfection has been completed satisfactorily to the health officer.

(d) Tuberculosis in school children, janitors, and teachers. (See section on "Schools.")

19. *Leprosy*.—(a) All cases of leprosy shall be reported to the local health officer and by him to the State commissioner of health, who shall decide upon such case as it may require.

(b) Cases which are in the ulcerative stage or show the bacillus of leprosy in the sputum or nasal secretions on microscopic examination shall be subject to rigid segregation and quarantine according to the directions for the individual case issued by the State commissioner of health.

(c) No city or county board of health shall impose quarantine upon a case of leprosy unless permission is given by the State commissioner of health.

20. *Favus*.—(a) All cases of suspected favus shall be reported to the health officer and by him to the State commissioner of health.

(b) The State commissioner of health shall thereupon cause such suspect to be examined by experts, and if they shall declare the case to be one of favus the following rule shall be enforced:

(1) If in a child, such child shall be excluded from any public, private, or parochial school until the disease has been arrested.

(2) In all cases such measures of protection from the transmission of the disease as may appear necessary shall be enforced by the State commissioner of health.

21. *Trachoma*.—(a) All cases of trachoma must be reported to the local health officer within whose jurisdiction the case occurs, and health officers shall report each case to the State commissioner of health.

(b) No child suffering from trachoma shall be allowed to attend any public, private, or parochial school unless under the close supervision of a competent physician, who shall certify in writing to the school board and the health officer that the case is not in a contagious stage.

22. *Uncinariasis or hookworm infection*.—(a) All physicians in the State shall report each and every case of hookworm infection or suspected hookworm infection to the local health officer and to the State commissioner of health.

(b) Examinations of stools for suspected hookworm infection will be made by the bacteriologist, but all physicians or health officers wishing to utilize the State laboratory for this purpose shall first communicate with the State bacteriologist, who will send detailed instructions as to collection and forwarding of specimens.

(c) All persons suffering from acute uncinariasis shall be subject to isolation until the patient has undergone treatment and the stools proven free from eggs by microscopic examination.

(d) Since hookworm infection is found to be extremely frequent in certain immigrants, and also has been demonstrated in many other persons in the State in the past few years, physicians and health officers are urged to cooperate with the State board of health in endeavoring to collect all the data possible on this disease in this State.

23. *Rabies*.—(a) All cases of suspected rabies shall be reported by wire to the State commissioner of health in order that he may immediately obtain antirabic treatment from the Federal authorities.

(2) All animals suspected of being afflicted with rabies should not be killed, but wherever possible closely confined and the circumstances reported at once to the State veterinarian, who will then issue further instructions for the case.

NOTE.—Rabies in animals, which produces the disease known as hydrophobia in man, has been introduced in all States of the Pacific coast to an alarming degree within the last few years. Therefore, all health officers are warned of the liability of outbreak of rabid animals and are urged to take very prompt action in all suspected cases.

24. *Actinomyces*.—Since the disease actinomyces is amenable to surgical treatment in its early stages and is very fatal after it once invades the bronchial passages, physicians and health officers are urged to report all suspicious cases and to send a pathological specimen to the State laboratory for verification. The best evidence indicates that the disease is very slightly, if at all, contagious; therefore isolation of these cases will not be required.

25. *Pellagra*, *amaebic dysentery*, *trichinosis*, *echinococcus infection*, *Japanese lung fluke disease* (*parasitic hemoptysis*).

All these diseases are reported occasionally in this State and all are diseases which are dangerous, therefore all physicians and health officers are urged to report in detail the occurrence of all positive or suspected cases of the diseases to the State commissioner of health. (It is a matter of special interest that new cases of Japanese lung fluke disease are being reported on the Pacific coast and it is reported that some cases have been seen in native Americans.)

## **MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.**

### **ALEXANDRIA, VA.**

#### **Garbage—Dumping of in Vacant Lots Prohibited. (Ordinance adopted July 23, 1912.)**

SEC. 11. It shall be the duty of every occupant of any lot within the corporate limits of this city (or the owner if the premises are unoccupied) to keep such lot well cleaned—that is, free from all offensive and deleterious substances—and also to prevent or remove any accumulation of stagnant water on such lot or premises and to keep the same well drained, as far as possible, to prevent dampness. If there be any cellar or cellars on any such lot or premises, such cellar or cellars shall be kept clean and free from all stagnant or standing water; and if there be any lot, flat or marshy places on such lot, the same shall be drained either by open or blind ditches, by the occupant of such lot, or by the owner thereof if the premises are unoccupied.

SEC. 12. No person shall deposit or cause to be deposited in any street or public or private alley any filth, garbage, ashes, rubbish, or any putrid animal or vegetable matter, or rubbish or other such thing, and the words "rubbish or other such thing" shall be construed to include small handbills, generally denominated "dodgers," for advertising purposes, as well as all waste paper. No person shall create any nuisance upon the lot of another by turning any sluice water thereon or by throwing any slops or filth thereon, or by transferring in any way the filth from his own lot to the lot of another. And no person shall permit any water to run from his lot or premises into the gutter of any street or alley, unless such water be rain water and the said gutter be paved and of sufficient fall to prevent the standing water therein. But nothing in this section shall prevent the emptying of drains from houses not adjacent to streets with sewers in them into ravines or drains.

### **BAYONNE, N. J.**

#### **Privies and Cesspools—Construction and Regulation of. (Regulation Board of Health adopted June 20, 1912.)**

SEC. 41. (a) No privy vault or cesspool shall hereafter be constructed in said city without a permit for that purpose first obtained from this board; nor shall any privy vault or cesspool be constructed on any premises where there is a sewer in any street or alley on which the said premises abut, and all applications for permission to dig a privy vault or cesspool must be accompanied by a certificate from the proper city official as to such sewer.

(b) No privy vault or cesspool shall be constructed or permitted to remain on any premises abutting upon or accessible to the street, avenue, or public alley along which a sewer is built or laid, and when notice to discontinue said privy or cesspool shall be issued by this board the owner or agent thereof shall provide proper sanitary water-closets, which shall discharge into said sewer. In all streets or avenues in which a public sewer shall hereafter be laid all cesspools and privy vaults maintained or existing on said streets or avenues shall, within sixty days after the completion of said sewer, be emptied, inspected by an officer of this board, and then filled with fresh earth. Any person violating any of the provisions of this section shall on conviction thereof pay a penalty of twenty dollars.

SEC. 42. No person shall hereafter build, make, or erect any privy vault or cesspool within said city, unless the same shall be constructed of well-burnt brick or stone laid in hydraulic cement, and said privy vaults or cesspools shall not be less than

four or more than eight feet deep, and the sides and bottom thereof shall be at least twelve inches in thickness; provided, however, that in lieu of brick or stone the bottom may be constructed of one piece of flagstone at least two and a half inches thick, laid in cement; and said privy vaults or cesspools shall be water-tight; provided that, by permission of this board, privy vaults and cesspools may be made or constructed in such manner and of such material as in each case the board may approve.

SEC. 43. No privy vault or cesspool shall be built or maintained within twenty feet of the line of any street, within three feet of the party line or fence or the adjacent lot or lots, within twenty feet of the door or windows of any house, or within a distance to be determined by this board of any well or cistern, unless otherwise ordered by this board; and no privy vault or cesspool shall be completed, nor shall any cover be made, put on over the same until the said privy vault or cesspool has been inspected by an officer of this board and been found to correspond to the terms of the permit and the provisions of the rules and regulations of this board.

SEC. 44. No person shall construct or alter any water-closet or catch basin for the purpose of connecting any premises with any sewer drain or privy vault or cesspool, or for any other purpose, without first obtaining from this board a permit to do so, and such construction or alteration shall conform to the rules and orders of this board.

SEC. 45. No privy vault or cesspool shall be constructed without adequate provisions for the effectual and proper ventilation and cleansing thereof, nor shall any privy vault or cesspool be constructed having any pipe connected with the interior of a house or building, unless so arranged as to prevent the admission of gas into such house or building.

SEC. 46. Whenever the use of any privy vault or cesspool is discontinued, such privy vault *must be cleaned to the bottom* and filled up with earth or other suitable material, such filling to be done under the supervision of an officer of this board.

SEC. 47. Privy vaults and cesspools will be ordered cleaned whenever the contents shall be within two feet of the ground surface, or whenever, from foulness or other cause, it may be deemed necessary to clean them.

SEC. 48. When a notice to clean a privy vault or cesspool shall be issued by this board, the contents of said privy vault or cesspool *shall be cleaned to the bottom*.

SEC. 49. No person shall empty or attempt to empty any vault, sink, privy, or cesspool except pursuant to a permit therefor first received from this board; the fee for said permit to be one dollar, to be paid to said board.

SEC. 50. No person or persons shall empty or remove, or cause, or suffer, or permit to be emptied or removed, the contents of any privy or cesspool, between the last day of May and the last day of September in any year (except between the hours of 11 o'clock p. m. and 4 o'clock a. m., and during the remainder of the year between the hours of 10 o'clock p. m. and 6 o'clock a. m., except the same shall be removed and transported by means of an air-tight apparatus, or in such a manner as shall prevent entirely the escape of any noxious or offensive odors therefrom.

#### BELLEVUE, OHIO.

#### Ice Cream—Preparation and Sale (Regulation Board of Health Adopted Mar. 21, 1912).

SECTION 1. *Constituents of ice cream.*—Ice cream shall be made from wholesome milk products, sugar, with or without natural flavoring, and with or without not to exceed in the aggregate seven-tenths of 1 per cent of starch, gelatine, gum arabic, or tragacanth, and shall contain not less than the required per cent of milk fat.

SEC. 2. *Per cent of milk fat.*—Ice cream, nut ice cream, fruit ice cream, and French ice cream shall contain at least ten per cent of milk fat, unless the per cent of milk fat is stated as provided in section 3 of this article, but no substance containing less than 10 per cent of milk fat shall be designated as or called ice cream, nut ice cream, fruit ice cream, or French ice cream.

SEC. 3. *Labels and placards.*—No person by himself or by his servant or agent, or as servant or agent of any other person, shall manufacture, offer or expose for sale, sell, or deliver any ice cream, nut ice cream, fruit ice cream, or French ice cream containing less than 10 per cent milk fat, unless the per cent of milk fat is conspicuously stamped, labeled, or marked in plain letters at least three-eighths of an inch square, so that the words can not be easily defaced, upon two sides of each and every bucket, box, can, wrapper, or other package containing said ice cream, nut ice cream, fruit ice cream, or French ice cream. When any ice cream containing less than ten per cent milk fat is sold at retail, a white placard not less in size than ten by fourteen inches shall be kept so as not to be concealed in any manner, but to be easily seen and read, if desired, by the purchaser at the time of the purchase, on which placard shall be printed, in black letters not less in size than one and one-half inches square, the per cent of milk fat contained in each and every grade of ice cream being offered for sale, and said placard shall not contain other words than the name of the manufacturer of said ice cream.

#### CHelsea, MASS.

**Fowls—When Marketed Killed Feathers to be Removed.** (Rule Board of Health adopted Oct. 29, 1912.)

RULE 132. No person shall bring into or expose for sale in the city of Chelsea the carcass of any hen, chicken, turkey, goose, or other fowl unless the feathers have been removed from said carcass before the same is brought within the city limits.

#### DES MOINES, IOWA.

**Sinks and Drains—To be Connected with Sewers or Cesspools.** (Ordinance adopted Nov. 11, 1912.)

SEC. 46. No water from a sink or drain, or stable, or dirty water of any kind shall be thrown or allowed to run upon the surface of the ground, but it shall be carried away by suitable pipes to the street sewer, or a cesspool if there be no public sewer available.

#### LOS ANGELES, CAL.

**Registration of Persons Practicing Medicine, Surgery, or Dentistry, and of Peddlers of Medicines and Drugs.** (Ordinance adopted May 1, 1912.)

SEC. 63. It shall be unlawful for any person to practice medicine, surgery, or dentistry in the city of Los Angeles, unless such person is registered in the office of the health department in a register kept for that purpose. The health commissioner shall not register any such person unless such person is licensed in the manner required by law by the State of California, to practice or carry on the profession or business for which such person seeks registration.

SEC. 64. The health commissioner shall provide a suitable book within which to register the names, addresses, dates of graduation, dates of license and dates of registration of physicians, surgeons and dentists; also a suitable book within which to register the names, addresses, and dates of registration of peddlers of medicine and drugs. The said health commissioner shall, upon the registration of any person as in this ordinance required, issue to such person a certificate of the fact of such registration and the date thereof.

SEC. 65. Each physician, surgeon, and dentist at the time of registering shall pay to the health commissioner a registration fee of two dollars for each registration.

Each peddler of drugs or medicines shall register, as in this ordinance required, once each year, and shall pay to the health commissioner a registration fee of two dollars for each registration.